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It's Important to Know In Time'

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The Newspaper of the Industry

Air Conditioning & REFRIGERATION NEWS

Production Tools for Victory

AN INTERNATIONAL INSTITUTION ★ SUBSCRIBERS ALL OVER THE WORLD ★

Technical Governmental

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'Written To Be Read on Arrival'

Issued Every Monday at Detroit, Michigan

DEC. 6, 1943

Vol. 40, No. 14, Serial No. 768
Established 1926.

L-38 PERMITS PRODUCTION

Inside Dope

By George F. Taubeneck

Neumann Honored

Our decorated - and - honored Dick Neumann (the machine-gun sergeant who was wounded in New Guinea and is now back with us) has been given new recognition, and a mighty fine thing it is.

Dick has been elected Post Commander of the first World War II post of the Veterans of Foreign Wars to get a charter, and Dick is the first World War II veteran in the United States to be elected a post commander.

You can guess how proud we are of Dick.

Mills vs. Ferris

Anyone who might have offered to make book on Reese Mills ever getting married would have had plenty of takers, at almost any odds, until recently. Reese, who is Assistant Manager of the Westinghouse Electric Appliance Division, was long considered the industry's Most Eligible and Most Elusive Bachelor.

Yet, here he is, married. The bride is the former Camille Beauchamp, Assistant Director of the Westinghouse Home Economics Institute. Many Westinghouse people in the southeastern district will remember her as their home economist in that area.

We've never had the pleasure of meeting the new Mrs. Mills, but she most certainly must "have something." To the happy newlyweds practically all of our subscribers will join in saying: "Welcome to the lodge." And from personal experience we can testify that nobody really appreciates married life so much as an old bachelor!

Scaife Goes South

Another widely popular member of the industry, General Electric's Art Scaife, is also embarked on an exciting adventure. Art is now surveying Latin American markets and service facilities for International G-E. He is on loan from the Bridgeport division.

He writes that local governments, with the aid of adequate refrigeration and sponsored cafeterias, are being weaned away from their diet of plaintains, corn, rice, and beans. It's a tremendous job—a long, slow one. But they are going through with it."

For ambitious young men in the refrigeration industry, the best postwar advice may be: "Go South, Young Man."

Seahawk Carrithers

And here's another personal note: Jimmy Carrithers, son of the gregarious "Zeke" (formerly of the NEWS—now with the Charles F. Dowd advertising agency in Toledo) is winning athletic renown with the Iowa Seahawks.

A naval aviation cadet, Jimmy is a 60-minute fullback on his company football team at the Iowa preflight school, and recently won the 165-pound wresting championship of the school.

Jimmy has a thoroughgoing back-

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Formation of Local Service Council Urged

Immediate Action Asked As Training Program Nears Approval

CLEVELAND—Refrigeration service contractors, dealers, and others in areas in which there is a shortage of refrigeration servicemen are being asked to take steps immediately to form a Local Emergency Refrigeration Service Council to put in effect the training program for refrigeration servicemen developed under the auspices of the National Refrigeration War Council and various government agencies.

The request is made by W. R. Kromer, Director of Training, National Refrigeration Service Manpower Committee and Consultant, Bureau of Training, War Manpower Commission.

Individuals or groups who wish to take advantage of the plan would be wise to first contact the local utility company, says Mr. Kromer, because a bulletin has gone out from the Council of Electric Operating Companies, with headquarters in Washington, D. C., suggesting that the local utility appoint one of its men to assist in the formation of the Local Emergency Refrigeration Service Council.

First step to be taken is the appointment of a Temporary Field Coordinator. This man can be either the utility company representative or an individual selected from the local industry group.

As soon as the Temporary Field Coordinator, or any individual named to head up a local activity, is selected, he should get in touch immediately with W. R. Kromer at his headquarters at 1835 East 24th St., Cleveland.

While the final details of the whole training program are not quite ready for release, Mr. Kromer has considerable material that can be sent to the field coordinator which will enable him to get the local activity under way.

Warren Named Chief Of Hotpoint Adv.

CHICAGO — Harry E. Warren, manager of refrigerator sales division of Edison General Electric Appliance Co., Inc., makers of Hotpoint electric appliances, has been appointed manager of the advertising division of Hotpoint, according to G. H. Smith, general sales manager.

Mr. Warren takes over his new position after six years with the Hotpoint organization, during which time he served first as sales manager of the home laundry division and more recently as manager of the refrigerator sales division.

Before coming to Chicago with Hotpoint, Mr. Warren spent some years as advertising manager of Caswell, Inc., G-E distributor in Detroit, and handled appliance promotion for the "Detroit Times."

J. W. Buggle, formerly assistant advertising manager, has been made manager of Hotpoint's advertising production section.

'Freon' Order Is Clarified on Two Main Points

WASHINGTON, D. C.—WPB on Nov. 30 issued an amendment and an interpretation of Conservation Order M-28 covering "Freon-12" refrigerant.

The amendment clarifies those paragraphs which cover the uses of other types of refrigerants, specifically those designated as Groups 2 and 3 under the order. In any instance where all refrigerants in both groups are prohibited for use under the American Standard Safety Code of Mechanical Refrigeration, the "Freon-12" gas may be used, but only if the system is not one for which deliveries are prohibited under List "A" of the order.

The amendment also makes a number of changes in the wording of the order, particularly with reference to the definition of "supplier," "equipment manufacturer," and "contract agent."

Under the Interpretation No. 2 the purchase of "Freon-12" is limited to the necessary usable quantity. Purpose of this interpretation is to prevent owners and lessees of refrigerating equipment using "Freon-12" from acquiring quantities in excess of their immediate essential requirements.

This interpretation also relieves restrictions upon owners of systems who might have had small quantities of "Freon-12" on hand for their own uses prior to the issuance of M-28.

Duggan Given New Post at Hotpoint

CHICAGO.—F. F. Duggan, sales manager of refrigerator sales division of Edison General Electric Appliance Co., Inc., makers of Hotpoint electric appliances, has been appointed manager of the refrigerator sales division of Hotpoint effective immediately, according to G. H. Smith, general sales manager.

Mr. Duggan takes over his new position after nine years with the Hotpoint organization during which time he served as territorial representative in North Carolina; then local branch manager in Charlotte; and refrigeration specialist in the Atlanta district. In 1940 he was appointed sales manager of the refrigerator sales division.

Civilian Producers To Get Leftover Materials

WASHINGTON, D. C. — Manufacturers of furniture, hardware, and other civilian goods, as well as materials supply firms, will be permitted soon to purchase "leftover" materials from war contractors.

WPB officials revealed Nov. 30 that an order is "in the works" which would modify the rigid control now enforced on the disposal of goods originally obtained with priority aid.

Effect of the action will be to make materials available for any product whose manufacture is not expressly banned or limited in volume. This would cover a wide range of goods in the hardware and homeware field on which WPB sets production quotas and permits manufacturers to turn out any amount they can get materials for, within the quota limit.

Revised Order Sets Quotas on Standard Commercial Items

'Postwar Prospects' Too Optimistic? Others Think Not

Debates will no doubt follow the publication, on page 8 of this issue, of "Postwar Prospects for Commercial Refrigeration," by E. A. Terhune, Servel sales manager. Many will probably think Mr. Terhune extremely optimistic; others will believe he did not go far enough.

In support of the optimists is an article in the December issue of "Fortune" magazine, entitled "That Refrigeration Boom." This article was written by Fortune Editor Gilbert Burck who, with Researcher Mabel Boulkind, spent more than two months chasing around the country, interviewing executives, engineers, and distribution people in an attempt to assay the postwar market for all types of refrigeration and air conditioning.

Mr. Burck's second sentence is indicative of the rosy-hued aspects of the whole article: "The refrigeration and air conditioning industry, by contrast, finds itself in the enviable position of being able to anticipate an unprecedented prosperity for itself without anticipating more than a prewar prosperity for the rest of the nation."

Such forecasts as "a million a year" for home freezers, 250,000 portable air conditioners a year, and more than four million household refrigerators are sprinkled lightly through this glowing survey in "Fortune."

Repair Shops Given Ratings To Buy Any Materials

WASHINGTON, D. C.—Procedures under which persons in the business of making repairs may obtain controlled materials and other materials and parts have been set up in a new CMP Regulation No. 9A, it was announced Nov. 26 by the Office of Civilian Requirements.

"This new regulation provides a simple and easy way of buying copper, steel, and aluminum, and assigns a blanket preference rating (AA-2 for industrial repair shops and AA-3 for civilian repair shops) to buy other materials or products that require a rating," states Gerald W. Weston, Acting Chief, Electrical and Mechanical Repair Section, Service Trades Division, OCR.

"From now on," declares Mr. Weston, "very few repairmen will have to fill out any more PD-1A or CMP-4B application forms. This should save them considerable time and will permit them to spend more constructive time on repair work."

At the same time an amendment to CMP Regulation No. 9, governing retailers' acquisitions of copper wire, was announced, the amendment eliminating from that regulation provisions under which repairmen were formerly able to obtain copper wire, inasmuch as repairmen will now obtain wire under CMP Regulation No. 9A.

Electrical contractors and repairmen who do maintenance and repair work for factories and other kinds of business that are listed in Schedules I and II of CMP Regulations 5

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More 'B' List Products Get 'Automatic' Ratings

WASHINGTON, D. C.—A major revision of Limitation Order L-38 just issued puts the commercial refrigeration field "back into business."

There are many important changes in the order but the most sensational is the one which sets up a permissible production quota for high sides, low sides, reach-in and walk-in refrigerators, drinking water coolers of a specified type, condensers, and all other systems and parts not on prohibited list "A."

The manufacturer's quota for each of these types of products per quarter is either:

(1) His dollar volume of all unfilled orders on hand rated AA-5 or higher for that class of news systems and parts, or

(2) One-sixteenth of the aggregate dollar volume of that class of news systems and parts (other than items on List A) manufactured by him during the calendar year 1940, in addition to his current production required to fill all orders for direct use by the Army, Navy, etc.

Complete text of the revised Order L-38 is published on pages 20 and 21 of this issue.

Producers may manufacture and assemble parts for maintenance and repair without reference to these restrictions, the order says.

List "B" to the order provides automatic AA-5 ratings to some previously restricted items, notably water coolers and evaporative coolers. These are termed items which may be delivered for "special uses" which are substantially defined in the order.

The "C" list of essential uses for which ratings will be given has been considerably expanded.

A thorough reading of the text of the order is suggested. WPB officials have warned that any wholesale violations of the order may result in a later tightening up of the restrictions.

Nash-Kelvinator Nets $4,115,550 In Fiscal Year

DETROIT—Nash-Kelvinator Corp.'s profit for the fiscal year ended Sept. 30, 1943, after provision for taxes, depreciation and reserves, was $4,115,550, it was reported here today by G. W. Mason, president, in a statement based on the annual report to stockholders.

This compares with a net for the previous twelve-month period of $3,828,355, and is equivalent to 96 cents a share on 4,291,188 outstanding shares.

Production in terms of dollar volume was $184,936,361 for the year, greatest in Nash-Kelvinator history, and approximately $63,000,000 more than 1941 previous high of $122,000,000. If war material production continues at the rate which prevailed toward the end of the year, according to Mason, dollar volume of business for the next twelve-month period should be approximately $350,000,000 as quantity output on all of the company's major war contracts approaches maximum.

The company reached its maximum propeller production schedule 60 days

(Concluded on Page 28, Column 4)

Text of Revised 'Freon' Order With Interpretation No. 2

(Portions set in boldface type are the new or revised parts of the order. All of Interpretation No. 2 is new.)

PART 1226—GENERAL INDUSTRIAL EQUIPMENT
[Conservation Order M-28 as Amended November 30, 1943]
DICHLORODIFLUOROMETHANE

The fulfillment of requirements for the defense of the United States has created a shortage in the supply of dichlorodifluoromethane for defense, for private account, and for export; and the following order is deemed necessary and appropriate in the public interest and to promote the nation defense.

§1226.27 **Conservation Order M-28**—(a) **Definitions.** For the purpose of this order:

(1) "F-12 gas" means dichlorodifluoromethane (sometimes called "Freon-12").

(2) "Person" means any individual, partnership, association, business trust, corporation, governmental corporation or agency or any organized group of persons whether incorporated or not.

(3) "Producer" means any person engaged in the production of "F-12" gas.

(4) "Supplier" means any person **to the extent that he is** engaged in the business of distributing "F-12" gas to persons using the same for installation in refrigerating or air conditioning systems. The term shall include an equipment manufacturer to the extent that he engages in the sale of "F-12" which has not been installed in such systems. "System" means any "system" as defined in General Limitation Order L-38.

(5) "Equipment manufacturers" means any person **to the extent that he** uses "F-12" gas for charging new refrigerating or air conditioning systems or parts of systems manufactured by him. It does not include affiliates, subsidiaries, branches, divisions, or sections or an enterprise, if not actually engaged in the manufacture of systems or refrigerant containing parts of systems.

(6) "Insectitcide manufacturer" means any person **to the extent that he** uses "F-12" gas in the production of insecticide.

(7) "User" means any person who installs "F-12" gas in a refrigerating or air conditioning system, other than an equipment manufacturer. It includes suppliers, service agencies, owners, or lessees, to the extent that they engage in installing "F-12" gas in any system.

(8) "Contract agent" means any person to whom or for whose account "F-12" gas is delivered by a producer for distribution to suppliers.

(If the same person, or two or more branches, divisions, or sections of the same enterprise, acts in two or more capacities as contract agent, supplier, equipment manufacturer, or insecticide manufacturer, the particular provisions of this order which apply to the respective activities must be followed, to the extent to which the various provisions are applicable to each activity.)

(b) **Systems for which no deliveries are permitted.** (1) No person (including users, dealers, and other suppliers, and producers, shall deliver, or accept delivery of, any "F-12" gas for use in, or for resale for use in any new or used system which is of a type referred to in List A.

(2) During the period from November 12, 1943, through March 31, 1944, no person (including users, dealers, and other suppliers, and producers), shall deliver, or accept delivery of, any "F-12" gas for use in, or for resale for use in any new or used system of any type (not in List A) unless the system must be operated under one or more of the following conditions.

(i) Where an air-cooled condenser is used and the ambient temperature is 110° F. or higher; or

(ii) Where the saturated refrigerant temperature corresponding to the suction pressure is less than minus 10° F.; or

(iii) Where aluminum or magnesium alloys or rubber **(except synthetic rubber)** have been used in construction of the system and come in contact with the refrigerant, and are not easily replaceable; or

(iv) Where the system is for use abroad ship, or outside of the continental United States by the Army, Navy, Maritime Commission, or War Shipping Administration; or

(v) Where the total operating charge required to operate the system is ten (10) pounds or less of "F-12" gas and the system was in operation on November 12, 1943, and is used for food preservation or for storage of penicillin, blood serum, blood for plasma, blood plasma biologicals, and bacteriologicals; or

(vi) Where the use of **no** Group 2 or Group 3 refrigerants, as defined in the American Standard Safety Code for Mechanical Refrigeration, ASRE Circular No. 15, ASA-B9-1939, as approved by the American Standards Association April 20, 1939, is **permitted** by that Code; **or**

(vii) Where the system is used in a sealed railroad car or sealed bus.

(The above restrictions apply not only to systems used for ordinary civilian purposes, but also to those owned, operated, or used within the continental United States by the Army, Navy, Maritime Commission, or War Shipping Administration, including post exchanges and ships service stores, other than those used aboard ships.)

(3) Attention is called to paragraph (c) (2), which prohibits a supplier from delivering "F-12" gas except on certified orders.

(c) **Deliveries by suppliers.** (1) **No supplier or any other person (except a producer) shall deliver any "F-12" gas for export outside of the continental United States, or for use by any of the following non-retail users (or to any ship yard or other person for use in a system to be delivered to any of them), namely:** The Army, Navy, Maritime Commission, War Shipping Administration, post exchanges, ships service departments and activities, equipment and insecticide manufacturers, for new or used systems, or for use in insecticide, without specific authorization from the War Production Board. **Subject to the foregoing restriction, any supplier or any other person (except a producer) may deliver "F-12" gas to any other person, for use in any new or used system not referred to on List A of this order, if it must be operated under one or more of the conditions stated in (b) (2) (i) to (b) (2) (vii) both inclusive.**

No person shall accept from a supplier **or other person** any delivery of "F-12" gas which is prohibited by the restrictions in this order.

(2) Whenever the owner of a system or any other user wishes to obtain "F-12" gas for installation in a system or systems for which deliveries by suppliers are permitted under this order, he may place his order with any supplier for the minimum quantity, which the available cylinder or cylinders permit, necessary to bring the charge in the system or systems up to a normal operating charge. He must certify his order, or the vendor's delivery receipt, by a certificate endorsed on or attached to it, showing that the "F-12" gas is to be used for such purposes only, and that he is not holding any empty cylinders not owned by him, which shall be in substantially the following form:

The undersigned purchaser certifies to the seller and the War Production Board that he does not have any "F-12" gas cylinders not owned by him, which have been empty for more than 15 days; and that the "F-12" gas covered by this order will not be used or resold for any purposes not permitted by Order M-28.

Such certificate, which must be signed by the purchaser or his authorized official, will constitute a representation that which is stated in it is true. A supplier must not deliver any "F-12" gas except under certified orders; and he must not make delivery under any order which is certified if he knows, or has any reason to believe that the certificate furnished with such order is untrue, incomplete, or inaccurate. In such a case the supplier must reject the order, and should explain why he is doing so, so that the prospective purchaser can comply with this order. Each supplier must keep all accepted orders and certificates which he receives, for a period of two years, for inspection by the War Production Board. (Certificates in the form required by this order before its amendment on November 12, 1943, may continue to be used for 30 days after that date, in place of the above form.)

This restriction shall not prevent a person who services several systems for which deliveries are permitted by this order from purchasing a cylinder of "F-12" gas from a supplier, if the amount purchased is the smallest quantity practicable considering the sizes of the standard commercial cylinders and the amount needed in his current operations.

(3) No "standby charge" or any other quantity of "F-12" gas, over and above that needed to bring the total charge in a system for systems up to the normal operating charge, shall be delivered to or accepted by any person for use in a system which he owns, leases, or operates (except the Army, Navy, Maritime Commissions or War Shipping Administration): except, however, that a "standby charge" may be maintained for a system which is operated primarily for one of the following purposes; air conditioning or refrigeration for the production and storage of penicillin, or blood serum; or refrigeration for the storage of blood for plasma, or the production or storage of blood plasma.

(d) **Deliveries by producers.** Each producer shall hold his entire inventory of "F-12" gas, together with all additional quantities produced or otherwise obtained by him from time to time, for delivery under such orders and for such uses as may be authorized or directed from time to time by the War Production Board. No deliveries of "F-12" gas shall be made by a producer except pursuant to specific authorizations or directions heretofore or hereafter issued by the War Production Board.

(e) The provisions of this order shall be followed by every producer, contract agent, supplier, user, equipment manufacturer, insecticide manufacturer, and any other person buying, selling or delivering "F-12" gas, without any regard to any preference ratings which have been assigned or which may hereafter be assigned to particular contracts or orders.

(2) **Reports.** (i) Each equipment manufacturer who wishes to secure delivery of "F-12" during any month for charging systems or parts produced by him, or for factory repair and charging of sealed or hermetic condensing units, shall file with the War Production Board, on or before the 15th day of the preceding month a report on Form WPB-3326, prepared in accordance with the instructions for such form.

(ii) Any person wishing to secure "F-12" gas during any month for **ultimate uses (such as testing coaxial cable for leaks) other than the charging of new or used refrigeration or air conditioning systems or parts or use in insecticide,** shall file with the War Production Board, on or before the 20th day of the preceding month, a report by letter, in triplicate, showing the minimum amount required for the month, the purpose for which required, and the amount used during the preceding calendar month for that purpose.

LIST A—SYSTEMS FOR WHICH NO DELIVERIES ARE PERMITTED

Air conditioning systems. Any system, of any size operated or installed for the purpose of lowering the temperature and/or humidity of air in any building, room, or other enclosure used as, or located in any of the following:

Amusements parks.
Animal hospitals.
Auditoriums.
Ballrooms, dancing studios, and dance halls.
Bank and loan associations.
Bars, cocktail lounges, and beer parlors.
Bowling alleys.
Concert halls.
Funeral parlors.
Golf clubs, country clubs, athletic clubs, and all other clubs and club houses.
Hotels and apartment houses.
Moving picture houses.
Night clubs.
Office buildings and offices, public or private.
Railway, streetcar, and bus stations, and terminals.
Residential buildings and dwellings of all kinds.
Restaurants, cafeterias, and other places selling meats, food, or beverages.
Schools.
Service establishments, such as laundries, cleaners and dyers, tailor shops, barber shops, "beauty" parlors, automobile sales and service shops, and repair shops of all kinds.
Skating rinks.
Stores, selling any kind of products, material or merchandise, at retail or wholesale (excluding manufacturing establishments).
Studios of all kinds.
Theaters.

This list does not include (i) any such system used primarily to air condition a building, room, or other enclosure used chiefly for purposes not listed above, or (ii) any system designed, necessary and used, in substantial part, for the refrigeration and storage or processing of food, ice, or other materials or products, necessary to life or health, or to be delivered to the Army, Navy, Maritime Commission, or War Shipping Administration, and requiring refrigeration, temperature control, or freedom from dust or other impurities.

Refrigeration systems.
Skating rink systems.
Refrigeration systems solely for storing or dispensing carbonated or malt beverages.

[Interpretation 2]

(a) **Quantities which may be obtained by system owner.** Subparagraphs (c) (2) permits the owner (or lessee) of a refrigerating or air conditioning system (not on List A) who does his own installation of "F-12" gas, to place his order for the minimum quantity "which the available cylinder or cylinders permit," necessary to bring the charge in his system up to a normal operating charge.

The standard commercial cylinders are generally available in sizes which contain four pounds, 10 pounds, 25 pounds, and 145 pounds of the gas, and a particular supplier may not have all four sizes in stock at all times. Questions will therefore arise as to the number and sizes of cylinders which the owner of a system is permitted to obtain, if the particular supplier with whom his purchase order is first placed should not happen to have the sizes of cylinder from which the minimum quantity needed by the system can be furnished the owner.

In such a case, the owner of the system should make a reasonable effort to obtain the minimum quantity which he needs from some other supplier in his locality, rather than purchase an excessive quantity from the first supplier upon whom he calls. While the order does not prescribe rigid rules as to exactly what effort the purchaser should make in every case, it is required that he do whatever is practicable, under his particular conditions, to obtain the minimum quantity which he needs, and no more.

Where he is located in a large community in which there are a number of suppliers, he should contact several, if necessary in order to obtain the quantity needed. If he happens to be located in a small community where there is only one supplier who cannot furnish the exact quantity needed and the "F-12" gas must be obtained immediately in order to avoid spoilage of a substantial quantity of food, the restriction would not prevent him from obtaining a larger amount, if that is unavoidable without letting his food spoil.

As a guide to the number and size of cylinders which should normally be obtained, for the different quantities of "F-12" gas which may be needed in different cases, the following table is furnished:

Pounds of "F-12 Gas Required	Amounts which should be ordered — Number of Cylinders: 4 Lbs.	10 Lbs.	25 Lbs.	145 Lbs.
0-4	1	....	....	....
5-9	....	1	....	....
10-14	1	1	....	....
15-24	....	2 or	1	....
25-29	1	....	1	....
30-39	1	1	1	....
40-49	1	2	1	....
50-59	....	1	2	....
60-69	....	2	2	....
70-79	1	....	3	....
80-89	1	1	3	....
90-110	....	1	4	....
111-145	....	....	....	1
146-170	....	....	1	1
171-195	....	....	2	1
196-220	....	....	3	1
221-245	....	....	4	1
246-290	....	....	....	2
291-315	....	....	1	2
316-340	....	....	2	2
341-365	....	....	3	2
366-390	....	....	4	2
391-435	....	....	....	3

The above interpretation applies only where the system owner buys his "F-12" gas from a supplier, and installs it himself. If he has a service shop install the gas, the shop will always be able to furnish no more than the amount actually needed, from its service cylinders, and there will be no problem.

(b) **Installation of "F-12" gas in system or parts held by equipment manufacturers or dealers. Paragraphs** (b) (1) prohibits deliveries of "F-12" gas for systems on List A; (b) (2) prohibits deliveries for any other system, unless it must be operated under one or more of the conditions specified. These restrictions are intended to prevent deliveries of "F-12" gas where there is a sale or other delivery of the gas. They prevent an equipment manufacturer or other person from delivering "F-12" gas in any new or used system or refrigerant-containing parts if charged with "F-12" gas furnished by him after the effective date of the applicable restriction, for any prohibited use.

These restrictions do not prevent the withdrawal and reinstallation of "F-12" gas in the course of repairing a used system or refrigerant-containing part, where no additional "F-12" is added to what was already in the system or part.

Neither do they restrict the delivery of new or used systems or refrigerant-containing parts which had already been charged at the time the applicable restriction became effective; nor do they prevent the owner or lessee of an installed system who had "F-12" gas in his possession on the effective date of the applicable restriction, from charging the system with such gas, or having someone else do this charging for him, where no transfer of possession or ownership is involved.

Issued this 30th day of November 1943.

★ CHRYSLER AIRTEMP AT WAR ★

From tiny, fractional horsepower to big 75 horsepower units, Chrysler Airtemp Radial Compressors are performing a major war job on both the production and battle fronts.

The science of air control is built around the compressor. Chrysler Airtemp's *exclusive* Variable Capacity Radial Compressor provides a new efficiency and accuracy in indoor climate regulation. The radial cylinders cut in or out automatically, one at a time, to meet varying load requirements. This flexibility eliminates the peaks and valleys resulting from abrupt starting and stopping of ordinary compressors . . . holds temperature and humidity at a constant level.

Years spent in building delicate mechanisms, have developed high-precision, versatile skills at Airtemp, now devoted to war production. Backed by Chrysler Corporation research and engineering, when peace comes, these skills will again create heating, cooling and refrigeration units for homes and commercial use that will set new, high standards of efficiency and performance.

The lessons learned during peace in free competitive enterprise—freedom of the individual to produce and compete—today bring strength to a nation at war.

War Products of Chrysler Corporation

Tanks • Tank Engines • Navy Anti-Aircraft Guns • Army Anti-Aircraft Guns • Bomber Fuselage Sections • Bomber Wings • Bomb Racks • Bomb Shackles • Fighter Landing Gears • Aluminum Alloy Forgings • Aluminum Alloy Castings • High-Powered Aircraft Engines • Cycleweld Cement • Wide Variety of Ammunition • Anti-Tank Vehicles • Command Reconnaissance Cars • Troop and Cargo Motor Transports • Ambulances • Weapons Carriers • Gyro-Compasses • Navy Pontoons • Marine Tractors • Harbor Tugs • Marine and Industrial Engines • Smoke Screen Generators • Air Raid Sirens and Fire Fighting Equipment • Powdered Metal Parts • Cantonment Furnaces • Tent Heaters • Refrigeration Compressors • Field Kitchens • and Other Important War Equipment

Tune in Major Bowes every Thursday, CBS, 9 P. M., E. W. T.

Chrysler Corporation

PLYMOUTH • DODGE • DE SOTO • CHRYSLER • AIRTEMP • AMPLEX

BACK THE ATTACK—BUY WAR BONDS

Beyond the Horizon . . . Peace

We have come far this year along the road of battle. We know that the end is not yet, that higher hills must still be stormed, that the price of sacrifice must still be paid.

But we have come upward into the light. Our fighting men are driving back the enemy. Our ships and planes have scotched the menace of the submarine. Our cities are unseared.

And this country of ours has grown in power and resources, until it has become the greatest living force for good in the world.

Now, as we turn our faces toward the future, we can see the day of Victory dawning somewhere there, beyond the horizon.

We can go forward confident in the knowledge of our strength, the strength of millions of young men in arms, of mighty armadas of the air and the sea, of millions of workers producing unceasingly the machines and munitions that make our Victory sure.

We can go forward knowing that no nation has ever possessed so rich an endowment of materials, of skill and equipment; no nation has ever owned so great a reservoir of wealth, or so vast a pool of war-deferred demands for all the products that make up the American way of life.

As we turn our faces toward a new year . . . as we go on here at Kelvinator creating more and more weapons for Victory . . . as all of us at home carry on our portion of the fight . . .

Let us resolve to give, to the utmost of our power and means, to the men who fight for us across the seas.

Let us resolve to plan, now, to use wisely all the resources that this nation holds, to build enduringly the better life that is to come . . .

The life of a nation founded upon the dignity and honor of the individual, upon his right to a free and full opportunity to grow and to be useful to his fellow men . . .

This is the life for which our men have fought and bled . . .

This is the life they must find when they come back with peace —the peace that lies there, ahead, beyond the horizon.

The men and women of the Propeller Division of Nash-Kelvinator Corporation have been awarded, and proudly fly and wear, the famous Army-Navy "E" for High Achievement in War Production.

LOOK AHEAD WITH KELVINATOR
DIVISION OF NASH-KELVINATOR CORPORATION
Kenosha · Milwaukee · DETROIT · Grand Rapids · Lansing

Consumers Want Refrigerators More Than Any Other Appliance, Survey Reveals

NEW YORK CITY—Electric refrigerators have been designated the most wanted of all household appliances by Fact Finders Associates, Inc., in a recent survey conducted for "Printer's Ink."

Of the 819 workers questioned in the nine cities of Baltimore, Houston, Newark, Jersey City, Kansas City, Milwaukee, Hartford, Portland, and Youngstown, 213 want electric refrigerators, 197 want electric washers, 173 want radios, 157 want vacuum cleaners, 107 want gas stoves, 90 want toasters, and 76 want electric stoves. Moreover, the survey revealed, they all expect to pay cash.

The survey was undertaken to find out what the workers themselves expect, and what they are planning to do in the postwar period. Of the 819 persons interviewed, 391 were in the 25-to-35 year age group, 321 were between 35 and 50, and 107 were over 50; 418 were men, 401 women. 628 were plant workers, 191 were white collar workers.

It was generally evident that the workers interviewed were not kidding themselves into thinking present wages will continue. Only 4% believed hourly rates will increase and only 9.4% expected weekly wages to be more. The great majority, or approximately 65%, anticipated a wage reduction averaging 25%. Even the expectations of the white collar workers, whose wages are less likely to fluctuate, agreed with this.

Two of the questions touched on "who's who" in the postwar home: (1) "Do you think women now working in plants will continue to do so?" (2) "Do you and other employed members of your family expect to stay in your present jobs after the war?"

"In answer to the second question 40.4% of the husbands said they thought their wives would hold either the same or another job. But in answer to the first question, 52.4% of the men and 57.6% of the women agreed that few women will continue to work in plants," figures showed. Twenty-five individuals plan to go into businesses of their own.

22% WILL MOVE

Indication of population shifts, and of consequent market shifts, was revealed by 22% of the respondents, who expect to move somewhere else. Eighty of the 819 reported they were definitely planning to move either back home, or to the country, or to another town, but they do intend to move.

A great demand for housing was reflected in the hopes of 172 out of the 819 to buy a home. Most of the others plan house repairs.

Forecasting the food problem, the majority of the workers expected it to be as scarce or scarcer than at present, with prices as high if not higher. This note of pessimism came more often from women. White collar workers were more optimistic about the price of food than the factory workers.

On the tax question, 39.4% expected taxes will be higher, 35.4% about the same, and 23.4% thought they will be lower. There was a similarity in the vote of the two groups. Of the plant workers, 37.9% expect higher taxes; for the white collar workers the percentage was 44.5%.

Future buying trends emerged as the most interesting phase of the entire study, "Printers Ink" thought.

Of the major appliances, men wanted new refrigerators first, electric washers second. Women voted just the other way around.

There was also a pent-up demand indicated for the following, in the order named: Ironers, furniture, homes, sewing machines, clothes, master mixers, typewriters, waffle irons, farms, farm machinery, electric heaters, tires, electric cookers, alarm clocks, cooking utensils, motorcycles, garden tractors, television, bath tubs.

In summarizing results, the surveyors point out three inconsistencies in the workers' expectations and plans for the postwar period:

1. Though many expect wages will be lower, prices as high or higher, and taxes heavier than now, most of the workers have ambitious plans to own an automobile, a house, and major household appliances.

2. Though many expect there will be much unemployment, most workers think they will continue to work.

3. Though many expect that few women will continue to be employed in plants, a large number of husbands expected that their wives will work.

ALUMINUM COMPANY OF AMERICA,
1975 Gulf Bldg., Pittsburgh, Pa.
Please send me the new torch-welding instruction card.

Name_____ Title_____

Company_____

Address_____

Postwar Dealers Warned to Stop Many Unprofitable Practices

Discounts, Over-Allowances, 'Confusing' Guarantees Hit at San Diego Meeting

SAN DIEGO, Calif.—Proposals for solving several specific postwar merchandising problems aroused much interest at the eleventh annual conference of the Bureau of Radio and Electrical Appliances of San Diego County held here recently.

Discounts, over-allowances, service beyond guarantee periods, misunderstood guarantees, the threat of cooperatives and cooperative buying, and an unusual used appliances program just getting underway here, were among the many topics discussed.

MARGINS WILL FALL

Basing his discussion on the assumption that after the war margins on appliances will be reduced when selling is resumed, E. W. Meise of the San Diego Gas and Electric Co. reviewed many unbusinesslike practices of the past, such as discounts, over-allowances, etc. With generous margins these unprofitable practices could be carried on, Mr. Meise reasoned, but they will have to be eliminated in the postwar period if the appliance retailer is to survive and make a profit, he declared.

Mr. Meise also explained the so-called "Minnesota Plan" to curb unauthorized buying of appliances and other commodities. Now in force in six states, such legislation was recently introduced in the California legislature, but was too late to get action.

Misleading and confusing wording of guarantees and warranties were attacked by the Bureau's committee which has been studying that problem, in the report presented to the conference by Elmer B. Hazie, chairman.

WORDING IS 'CONFUSING'

"All action within our power should be taken to influence manufacturers to clean up the misleading, confusing wording that usually appears in such documents, refrigerators particularly," the report stressed.

Despite the care that is used by retailers in making a sale, the customer still thinks the "five year warranty" on a refrigerator protects him against all eventualities, the committee report declared. Two, three, or more years after the sale, the dealer is frequently forced to absorb the cost of a trip and the services involved, simply because the customer refuses to pay, or to force collection would result in loss of goodwill, said the report.

Simple, readable-print language telling the purchaser what the manufacturer "does not guarantee" would eliminate much of the costly service dealers now are forced to absorb without remuneration, the committee believes.

SEEK 90-DAY GUARANTEES

The committee also recommended that 90-day guarantees by the manufacturer and the dealer should be sufficient on all appliances except refrigerators.

Term selling will also present problems in the postwar period, declared Martin Frazier, a former C.I.T. manager now vice president of the Security Trust and Savings Bank and a member of the State Committee on Postwar Term Selling.

Instalment buying will play an enormous part in creating postwar business, Mr. Frazier thinks, but credits will be watched more closely than ever before, he said.

He reviewed the course of term selling in the period prior to FHA and EHFA and then showed how the influence of appliance selling programs backed by these two agencies produced the $5 down and $5 a month" philosophy so common among selling men before Regulation W was enacted.

SHOULD CONTROL POLICIES

The industry should make every attempt to control its own selling policies to make unnecessary any permanent governmental control which would otherwise be inevitable, thinks Mr. Frazier. A middle ground type of contract, "fair to buyer and fair to seller, will be best for the industry's future and can be worked out with the cooperation of all interested agencies, Mr. Frazier believes.

Program to unearth used small appliances which have been discarded by their present owners but which would be welcomed by others was outlined for the San Diego bureau's conference by Frosty Raymond, advertising adviser.

The San Diego plan differs from others in that the dealers merely serve as collecting depots for the small appliances and do not have to repair them or recondition them. All appliances collected are turned over to the Goodwill Industries of San Diego for repair and distribution.

BACKED BY ADVERTISING

Scheduled to get underway the latter part of November, the program is being backed by heavy advertising. Insertions in local and county newspapers, street car and bus cards, radio announcements over the three San Diego stations, and window cards for dealers so they may be identified with the drive are planned.

Donors will bring their unused appliances to the dealer's store where a receipt will be given and a tag with the type of appliance, make, donor's name and address will be attached to the appliance. On call, Goodwill Industries will pick up accumulated items. After Goodwill Industries receives and classifies the appliances, the organization will send a "thank you" card to the contributor.

Goodwill Industries is intensely interested in the program, according to Myron Insko, executive manager, who addressed the conference.

More Promotion Planned For 'CP' Ranges

ST. LOUIS, Mo. — Increased promotion of "Certified Performance" gas ranges in 1944 to assist dealers and gas utilities build postwar business is planned by the CP Sales Management Committee, according to Lloyd C. Ginn, chairman, who addressed the annual convention of the American Gas Association held here recently.

The 1944 program will include trade paper promotion, a nationwide newspaper campaign, direct mail, and point of sale material aimed to help dealers and utilities obtain advance orders for postwar deliveries.

Results of the 1943 campaign was gratifying, Mr. Ginn said. Mats supplied to dealers and utilities appeared in more than 889 newspapers in 38 states with an estimated total circulation of 20 million.

ARMY E NAVY

OUR REFRIGERATION 'BLACKOUT' IS ONLY TEMPORARY . . .

Of course we would rather be making compressors than ordnance. But the big job right now is Victory. And what we are doing for Victory comes first. In spite of the greatest restrictions we are doing our very best to serve our customers. No temporary blackout is going to keep this refrigeration pioneer from coming back stronger than ever. All that's needed is the opportunity.

MERCHANT & EVANS COMPANY
PHILADELPHIA, PENNA. • Plant: LANCASTER, PENNA.

M&E EST. 1866

The Priorities Quiz

(Air Conditioning & Refrigeration News, with the aid of a man who is actually engaged in handling much priorities work, will attempt to answer questions from readers about priorities problems. The editors will not guarantee to answer all questions, nor can they guarantee that the answers will be legally perfect, but an effort will be made to provide a guide to correct procedure wherever possible.)

Monthly Report Is Suspended For 2 Months

Q. Do you know whether Form WPB-732 (Report of Monthly Operations) has been revoked or is still in effect? We have not received forms for our November report and cannot secure copies from our Regional War Production Board office.

A. The Bureau of the Census has announced that the regular monthly report of operations on Form WPB-732 has been suspended for two months (November and December, 1943), but that forms will be mailed for the regular quarterly report which will be due in Washington on Jan. 25, 1944. This will include the regular quarterly inventory report as well as the Report of Operations. It has been stated that Form WPB-732 has not been analyzed for several months because of a shortage of help in Washington. Possibly, this accounts for the suspension of the form for the last two months of the year.

Can CMP-5 Be Used For Crating Material?

Q. Is it permissible to use our MRO rating under CMP Regulation No. 5 to buy material for making wooden crates and wooden shipping containers for our own product? Priorities Regulation No. 3 discusses this but it does not seem to be clear to us.

A. Apparently the WPB agrees with you as to the clarity of this section of Priorities Regulation No. 3 because they recently issued direction No. 3 to Priorities Regulation No. 3 in an effort to clear up the many misunderstandings which have arisen on this point.

This direction says that you may use MRO ratings to purchase lumber and nails and other materials needed for making wooden crates or wooden shipping containers for packaging your own product where you do not buy more than 50,000 board feet of lumber in any calendar quarter for this purpose. This limitation applies only to those companies which operate a separate plant or a separate department which turns out quantities of standard shipping cases for packaging their own product.

If you do not operate such a plant or department, but use only "tailor made" wooden shipping containers which you make up as you need them, there is no limitation and you may use your MRO ratings for the lumber and nails and other materials without restriction.

Conversely, if you use more than 50,000 board feet of lumber and make up the shipping containers in quantity lots in a separate plant or department, you may not use MRO ratings for the purchase of lumber and nails and other materials, but you must make application to the War Production Board on Form CMP-4B for the nails (which are a controlled material) and for a preference rating with which to purchase the lumber.

New Interpretation of 'Minimum Inventory'

Q. We understand that there is a new interpretation recently issued by the War Production Board discussing the "practicable minimum working inventory" restrictions of Priorities Regulation No. 1. Can you tell us what it is, and what it provides?

A. You refer to Interpretation No. 7 of Priorities Regulation No. 1, which deals with "minimum sale quantities and production runs" as they affect a purchaser's "practicable minimum working inventory." As you know, Priorities Regulation No. 1 says that a purchaser may not accept delivery of any order which will increase his inventory beyond a "practicable minimum working inventory."

This interpretation now says quite plainly in answer to a question which has been raised many times that this provision will not forbid the purchaser from ordering and receiving more than a "practicable minimum working inventory" where he was compelled to purchase more than he actually needed because a manufacturer's minimum production run and minimum sale quantity were in excess of his actual immediate needs.

This interpretation also permits a supplier to reject his customer's order if it calls for less than his minimum sale quantity or production run. He may also reject his customer's order even if the total is more than his minimum quantity but calls for individual deliveries of less than his minimum sale quantity and production run.

It is pointed out, however, that this interpretation does not permit a person who has been assigned a rating for a specific quantity of a material to accept delivery of more than that specified quantity without applying for permission to receive more using this interpretation as a basis for his application.

Government's Cork Stockpile Reduced, Restrictions Off

WASHINGTON, D. C.—The minimum amount of cork to be maintained by the government as a war stockpile has been very considerably reduced to a point where it represents less than half of the amount originally recommended early in 1941 when cork was a very critical material, the Cork, Asbestos & Fibrous Glass division of the War Production Board announced Nov. 22. This procedure has been carried out in accordance with a new directive from the WPB.

Consistently over the past year, as the cork situation eased and as the U. S. shipping situation improved, the government stockpile has been reduced.

Industry has fully cooperated in the reduction of the government cork stockpile with the result that government has transferred to industry through sales to individual cork manufacturers about one-third of the cork which it owned as recently as July 31 of this year, according to William R. Compton, Jr., chief of the Cork Section.

As a part of a long-range program for cork developed jointly by the Cork, Asbestos & Fibrous Glass division and industry, the government-owned cork stockpile is supplemented by a minimum amount of cork of various grades which cork manufacturers have voluntarily agreed to carry. This amount fully equals the minimum cork stocks to be held by the government. The total of the two stocks minima is considered ample to meet war and essential civilian requirements.

Present stocks are considerably in excess of this combined minimum and at present there are no restrictions on the use of cork. Cork manufacturers can expect to operate on the present unrestricted basis so long as cork stocks in this country remain above the minimum under the program.

Cork consumption has increased steadily for the past six months until now it approaches an average monthly peace-time rate. Due to present adequate stocks no pressure has been exerted to increase present imports with the result that overall stocks have decreased over 25% in the past six months, and industry will be able to digest easily the amounts which they have purchased from the government to reduce its stockpile.

PURO ELECTRIC WATER COOLERS

Different models available for the various requirements of government agencies and war production plants.

PURO FILTER CORP.
440 Lafayette St., New York

DRINKING WATER SPECIALISTS FOR 40 YEARS.

BOUND FOR UNKNOWN PORTS

TODAY ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

In the early morning mists, a great convoy steals away for unknown ports, with its precious cargoes of men, munitions and food. Food for consumption on the voyage, for our boys in far-away countries, and for the oppressed peoples all over the world. Food, kept fresh and wholesome by refrigeration; only one of the many ways in which the refrigeration industry is helping to speed Victory.

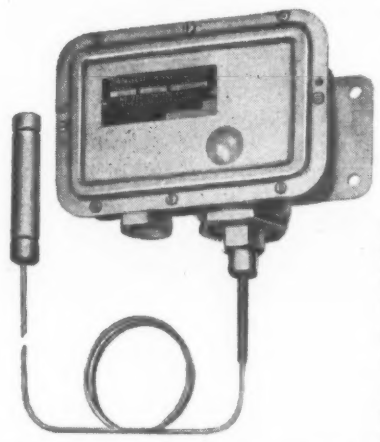
"DL" Contact Makers (Controls), specially designed for the rigors of wartime service, are in use today, by the thousands, on Maritime and Naval vessels, large and small, accurately controlling temperatures of food storage compartments, holds, refrigerated cases, etc., as well as protecting their engines from damage due to insufficient cooling or lubrication.

TOMORROW . . . . . .

The refrigeration industry will continue to play one of the most vital parts in our civilian life, assuring everyone a supply of fresh, wholesome food, in or out of season.

Fresh seafood for the rancher in Arizona; fresh raspberries in January for the businessman in Boston. Low temperature storage units, and multiple temperature units for storage of meats, fruit, and frozen foods for the home will be within the reach of all.

The valuable data gained by the industry in production for war, will be used to make better products for peace. "Detroit" products then, as now, and as in the past, will continue to be the best that it is possible to produce for the refrigeration industry.



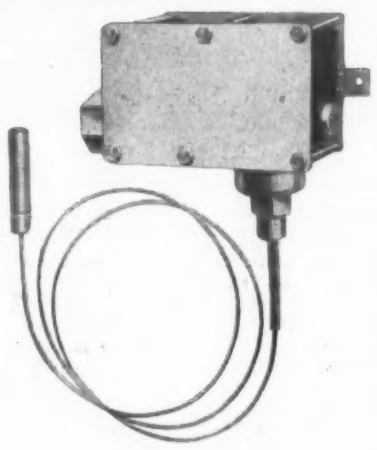
THESE PRODUCTS HAVE BEEN ESPECIALLY DESIGNED FOR WAR-TIME SERVICE

The No. 220 Hi-Shock Contact Maker is designed to withstand a 2000-ft. pound shock and will operate when completely submerged in water to a depth of 25 feet.

The No. 250-WT Water-Tight Contact Maker is designed for wet locations, where conditions may subject it to drippage or spray. It will operate submerged to a depth of three feet.

The above contact makers are available in refrigeration ranges for control of air, or liquid temperatures.

Write for Bulletins 204 and 206 for further data.



DETROIT LUBRICATOR COMPANY

General Offices: DETROIT 8, MICHIGAN

Division of American Radiator and "Standard" Sanitary Corporation

Canadian Representatives—Railway and Engineering Specialties Ltd., Montreal, Toronto, Winnipeg

★ "DL" Heating and Refrigeration Controls • Engine Safety Controls • Safety Float Valves and Oil Burner Accessories • Radiator Valves and Balancing Fittings • Arco-Detroit Air and Vent Valves • "Detroit" Expansion Valves and Refrigeration Accessories • Air Filters • Stationary and Locomotive Lubricators

G-E Credit Corp. To Handle Contracts

NEW YORK CITY—General Electric Credit Corp. has been organized by General Electric Co. under the New York state banking law to take over and expand the activities of General Electric Contracts Corp. Management of the new company will be the same as that of the contracts firm of which G. F. Mosher is president.

Financing for war construction and production work will be the immediate function of the new investment company, explains Mr. Mosher. Many of the smaller firms sub-contracting with General Electric need more capital to handle war contracts than they required in peacetime and find some difficulty in obtaining credit.

General Electric's intimate knowledge of the type of war work involved in the contracts and close contact with many of the contractors will prove advantageous to the new company, added Mr. Mosher. After the war the company will provide financing for the purchase of consumer goods as well as assistance in the purchase of other G-E products.

Since 1933 General Electric Contracts Corp. has been financing the sales of G-E products, particularly electrical appliances. While this latter business has been greatly curtailed it is expected to boom after the war.

Headquarters of the new corporation are at 570 Lexington Ave., New York City, and branches will be operated in principal cities.

Air Conditioning and Refrigeration Play Important Role In Production of Penicillin, 'Miracle Drug'

Design Calls For Most Exacting Type Of Conditions To Aid Proper Growth

By N. E. Sheldon, Carrier Corp., District Office Manager*

It has been my recent good fortune to meet several of the men who are charged with the responsibility for establishing new manufacturing facilities for the production of penicillin. The new plant under construction at East Syracuse for operation by Chaplin Biological Laboratories, a division of the Bristol Myers Corp., has become a project of vital interest to all of us in the Syracuse district.

Let us look briefly into the historic background of this new drug, which is often called a "miracle drug." In 1929, Alexander Fleming, noted bacteriologist at the University of London, found a spot of mold on a culture on which he was growing bacterial. This spot was surrounded by a border from which all bacteria had disappeared. Fleming made notes for future reference and went on with his original project.

It was about nine years later when a group of research men picked up the lead and duplicated the conditions. England had then been plunged into the war and was then in such immediate danger that her government could not give material aid for the advance of penicillin beyond a very limited laboratory production. The problem of rapid development was brought to America and it was seriously taken up by the National Research Council, a voluntary group backed by prominent drug manufacturers and sanctioned by the government.

At least 20 manufacturing projects are now under way by leading drug manufacturers, such as Pfizer, Squibb, Merck, Eli Lilly, Cutter, Cheplin and others.

*Presented before the Central New York Section, American Society of Refrigerating Engineers, Nov. 19.

Why It Is Important

Why is penicillin important? Why does it ride higher in priorities and directives than any other item on the war program of the nation? This anti-bacterial, chemotherapeutic agent called penicillin is a germ-killing chemical which causes the killing and the retreat of many of the most dreaded infections. It now appears that it will complement and go far beyond the magnificent group of sulfa drugs which have saved so many lives during the last six years.

It is now considered superior in the treatment of infected wounds, burns and compound fractures so frequent on the battlefield. These have often led to gas gangrene in the past and they either caused death or took years to heal. Penicillin is considered more effective for "strep infections," staphylococcus, which leads to blood poisoning pneumonia, empyema, cellulitis, gonorrhea, and a number of other diseases.

It is not a cure-all, but it does raise our hope that it, along with other drugs which will probably be developed from numerous molds now under investigation, will minimize many of the dread diseases of the past.

What about the production of this "miracle drug?" It is still very limited. The first gram of it which was produced under laboratory conditions in America cost about $6,000 or at the rate of $2,750,000 per pound. The cost of manufacture has dropped to about $30,000 per pound and when some of the new plants like Cheplin get into operation they hope to drop the cost to $7,000 or $8,000 per pound. Measured at 28,350 milligrams per ounce, we still find that virtually every milligram is earmarked for military hospitals or for research.

How Penicillin Is Made

How is penicillin made? The chemical structure of the material remains unknown despite intensive research. The only dependable methods of production at the present time are rather complex enlargements of proven laboratory methods. No short cuts have been proven insofar as I know.

Mold is grown in a rather flat type of bottle (approximately two quarts), which bottles are racked along the walls of large incubator rooms. A basic culture medium with lactose and various mineral salts and corn steep liquor is then inoculated with a spore suspension produced from the original Fleming strain.

It is necessary to expose a very large area of the nutrient liquid to the air. The quality of that air is of the greatest importance as any contamination of the air can nullify results. Growth of fungus is established by the first or second day and the growth of mold continues until the ninth or tenth day. Droplets of yellow liquid appear on top of the mold.

Sub-Zero Cooling One Step

The following are a number of principal steps which follow:

1. The yellow liquid is centrifuged from the mold and added to the culture medium. The mixture then goes through three or four steps of chemical extraction with alternate mixing of amul acetate and the culture medium. Both are cooled to 0° C. before mixing.

2. The contracted liquid is made alkaline and mixed with distilled water. The original 20 liters has now been reduced to about one-half of one per cent of its original volume.

3. The concentrate is then frozen at about —58° to —76° F. and subjected to higher vacuum in a Stokes evaporating and freezing unit. Several tests are made for strength as the vacuum drying proceeds.

4. At this stage the final product is a small granular powder which crumbles into small grains. It is then placed into ampules of glass which are flame sealed. The packing must be done in very dry air to prevent moisture regain in the powder.

It will take about 20 liters of culture fluid to yield one gram of purified penicillin. This is a ratio of 20,000 to one.

The final product is now used only in diluted liquid form. It can be diluted to one part in 2,000,000 parts and still be powerful enough when placed in a culture to kill every germ of certain kinds within two to three hours. Eventually when production has been greatly increased, it will also be used in powder and salve form.

Where does air conditioning or refrigeration come into the process? Dr. C. E. Clifton, bacteriologist at Leland Stanford university says, "The prevention of bacterial contamination appears to be the most difficult, but not insurmountable, obstacle to the production of penicillin on a large scale."

Air Must Be Sterile

Another person who is an executive of the Bristol Meyers Co. likened the need of biologically sterile air at optimum temperature and humidity conditions to that of a circulatory system which supports life and growth. Numerous laboratory results have been nullified or rendered inconclusive because of bacterial contamination.

On the Cheplin job the air will be initially passed through a good grade of industrial air filter, then through an electrical precipitator, then through an activated carbon deodorized and gas remover, then through an air washer for fixing the desired dewpoint temperature and moisture content, and then through sterile lamps before final distribution to the incubation rooms, inoculation room, cooling room, bacteria control laboratory, spore room, drying, shelling and filling room, chemical laboratories and various other rooms.

Design Considerations

A process refrigeration load of about 40% of the tonnage of the air conditioning system is to be handled with 30° F. brine to supply chilling effect to the culture medium and amyl acetate.

A small room at —5° F. is needed for storage of standards and unlyothiled (before sublimed and dried) liquids.

This all adds up to give us a system of air conditioning and refrigeration that is just about the most complete and exacting that design engineers, equipment manufacturers, and installers can produce.

STANDARD FEATURES OF THE P421B INCLUDE:

RANGE: Low side, 22" vacuum to 65 lbs. High side, 100 lbs. to 240 lbs., adjustable. Differential 25 lbs. to 45 lbs. Calibrated dials—direct reading scale. Reverse Acting Terminal—useful for alarm circuit or to ground low voltage ignition systems. Tamperproof shield for adjustment dials—Cold control for limited change of either cut-in or cut-out. 36" capillary pressure connections.

OTHER CONTROLS ALSO ADAPTABLE:

P420B Polartron Low Pressure Controller. Same features as P421B except less high pressure cutout.

L480B Polartron Temperature Controller. When refrigeration equipment is to be controlled from temperature as measured by a remote bulb.

L481B Polartron Dual Temperature and High Pressure Controller. When refrigeration equipment is to be controlled from temperature, and high pressure cutout protection is not a requisite.

WELDING processing of aluminum or steel is greatly accelerated and improved by the addition of refrigeration equipment for cooling electrode welding tips. The P421B Polartron Dual Pressure Controller is especially designed for this type of service. There is a Minneapolis-Honeywell refrigeration control for every purpose, each individually engineered for its particular application. Minneapolis-Honeywell Regulator Company, 2807 Fourth Ave. S., Minneapolis 8, Minn. Branches in principal cities.

THE POLARTRON SYSTEM OF FROST-FREE REFRIGERATION

MINNEAPOLIS Honeywell
REFRIGERATION CONTROL SYSTEMS

PAST

Performance has taught established Fogel dealers and distributors to place their confidence in us and we've managed to serve them well, even in these unusual times.

PRESENT

Resourcefulness has enabled us to accommodate all of the dealers, distributors and servicemen who have recently turned to Fogel as a new source of supply for equipment and advice.

FUTURE

Success lies in store for all of our customers, old and new, who continue to stay with us. When our facilities, which are now serving Uncle Sam and you, are converted overnight to 100% peacetime production, you'll be happy to have been with Fogel.

FOGEL POST-WAR PLANS WILL MAKE YOU A LEADER

MANUFACTURERS OF ALL TYPES OF COMMERCIAL REFRIGERATORS

FOGEL REFRIGERATOR COMPANY · Since 1899
Philadelphia, Penna.

OCR To Determine Civilian Goods Need On a Local Basis

WASHINGTON, D. C.—One hundred and four district advisory committees will be formed to advise the Office of Civilian Requirements of local needs for consumer goods and services in every section of the United States, WPB Vice-Chairman Arthur D. Whiteside has announced.

Representatives of manufacturing distributing, service, labor and civic groups in each community will be asked to serve on these committees on a voluntary basis to consult with OCR representatives.

The program will be directed by Russell C. Duncan, Minneapolis business man, Mr. Whiteside said. Mr. Duncan has been connected with the WPB and other war agencies since July, 1941, in various capacities, serving most recently as regional director at Minneapolis for the Smaller War Plants Corp.

The committees, together with OCR managers in the 13 War Production Board regional offices, will make recommendations to Washington on three major points. They are:

1. The need for production of essential civilian goods. As soon as the new system is in full operation, data on community needs and available facilities can be gathered and transmitted to Washington on short notice. As the war requirements picture changes, it can be reflected rapidly through these reports. The committees are expected to act as a coordinating group between the producers and distributors of civilian products, other governmental agencies dealing with various phases of this problem, and with OCR in Washington.

2. Equitable distribution of available merchandise. The field organization will be enabled to report quickly on local shortages of essential civilian articles. It is believed that this system will enable OCR to overcome local shortages quickly and to plan intelligently longer range distribution policies.

3. Operation of essential civilian services. Labor and equipment problems of laundries, hotels, restaurants, office buildings, warehouses and other essential civilian services have increased sharply in recent months. It is expected that the field organization will be able to analyze these carefully from the local standpoint and in many cases work out local solutions. They also will be able to report quickly to Washington problems that need further attention.

Mr. Duncan pointed out that, while he intends to push the program with all possible speed, it will be impossible to get all regional and district committees appointed and functioning immediately. Action will be carried forward through regional and district offices of the War Production Board, he said, and the regional organization is expected to be functioning early in December.

Detroit ASRE To Hear Of New Applications

DETROIT—Use of expansion valves on low temperature jobs and latest innovations in applications of small and medium condensing units will be discussed when the Detroit Section, American Society of Refrigerating Engineers, holds its monthly dinner-meeting at Rackham Foundation here Monday, Dec. 13.

F. Y. Carter, engineer with Detroit Lubricator Co., who has had much experience with expansion valves, will discuss them, following which L. W. Larson, assistant sales manager of Tecumseh Products Co., will talk on various low and high side refrigeration applications of condensing units.

After the main addresses, there will be a panel discussion during which Messrs. Carter and Larson, assisted by Dan J. Mull, chief refrigeration engineer of McCord Radiator & Mfg. Co., and Ed. M. Smith, district sales manager and engineer of Penn Electric Switch Co., will answer questions of the members.

Wm. L. Currie will be chairman for the evening.

Dinner is scheduled for 6:30, with the meeting planned for 8 p.m.

Priorities Regulation 3 Changes Simplify Use of Ratings

WASHINGTON, D. C.—Priorities Regulation No. 3 has been completely revised to simplify rules governing use of preference ratings and to make other changes, the War Production Board has announced.

Preference ratings may now be used to get material processed, even though the person using the rating plans to use the material himself rather than deliver it, or incorporate it into a product which will be delivered to someone else.

CONTROLLED MATERIALS

According to Interpretation No. 7 to Regulation No. 3, preference ratings may not be used to get materials processed into controlled materials forms or shapes by either a producer or warehouse, inasmuch as preference ratings may not be used to purchase the controlled materials themselves.

With certain limited exceptions, manufacturers are not permitted to make allotments or furnish controlled materials to Class B product producers for processing, and that, consequently, no preference rating can be used to have such processing done, the interpretation also points out.

Persons who have been assigned a rating to get materials may use it to get the use of a controlled materials producer's facilities to have material processed into other than controlled material forms and shapes, but rated orders for the use of a controlled material producer's facilities must not interfere with the acceptance, production, or delivery of orders for controlled materials which the producer is permitted to fill under CMP Regulation No. 1, it was stated.

Recently amended Interpretation No. 4 to Priorities Regulation No. 1 also stresses the fact that rated orders must not interfere with the acceptance, production, and delivery of controlled materials orders.

Persons to whom preference ratings have been assigned for materials are prohibited by the revised Regulation No. 3 from extending such ratings to obtain containers or closures to pack the material, WPB announced.

Such ratings may not be extended to get material for the improvement, expansion, or construction of plant, or to obtain machine tools or other items which will be carried as capital equipment or MRO on the purchasers' accounts, according to WPB rulings.

NO BUSINESS MACHINES

Likewise, such ratings may not be extended to obtain business machines whether the machines are purchased or leased.

Ratings may be used, however, for purposes other than replacing inventory after three months from the time the rating could first have been used has elapsed. Formerly the three-month limitation applied to desired extension of ratings for any purpose.

More Fourth Quarter Icebox Quotas Set

WASHINGTON, D. C. — Exact quotas for fourth quarter production of domestic ice refrigerators have been assigned by the War Production Board to manufacturers in Group I and Group II labor areas, as classified by the War Manpower Commission.

The established quotas may not be exceeded, even for orders bearing preference ratings, WPB points out.

Manufacturers listed by the WPB and their fourth-quarter quotas are as follows:

George H. Dean, Inc., Norwood, R.I.	435
Getz Bros. and Co., San Francisco	1,100
Ice Cooling Appliance Corp., Morrison, Ill.	18,325
Minton Lumber Co., Mt. View, Calif.	614
Modern Refrigerator Works, Glendale, Calif.	4,620
Progress Refrigerator Co., Louisville, Ky.	3,795
L. D. Reeder Co., Los Angeles, Calif.	14,225
Victory Mfg. Corp., Baltimore, Md.	610
Ward Refrigerator Co., Los Angeles	17,970

DEVELOPING THE MARKETS YOU'LL WANT TO REACH

Looking Ahead in Air Conditioning with Ross Rathbun

ROSS RATHBUN is Manager of Air Conditioning for Westinghouse Electric and Manufacturing Company. He directs the sale, engineering and manufacture of heavy duty air conditioning and industrial refrigeration equipment. Well known in engineering circles, progressive and forward looking, Mr. Rathbun will undoubtedly become an important factor in the industry's future development.

"IN THE MINDS OF MANY PEOPLE, air conditioning has been associated with comfort cooling. Under such a conception its use would be confined to locations where, geographically or for other specific reasons, temperature and humidity combinations result in physical unpleasantness.

"Where real air conditioning has been installed, the increased efficiency of both office and factory workers amply demonstrates the growing demand which will be made upon the industry as soon as materials and facilities can be released from war production.

"FOR AGES MAN HAS BEEN ACCUSTOMED to the comforts of heated places. The scientific progress of the age indicates that people will not long consider that heat alone produces a satisfactory condition of bodily comfort.

"Air conditioning, however, has a very much greater future than even the almost limitless use for human comfort. Industrial processes are calling daily for new applications, adding to the already imposing list of satisfactory installations. But this field has scarcely been touched—its boundaries are far beyond those most optimistically drawn at present.

"REVERSE-CYCLE AIR CONDITIONING, for example, holds great promise. Systems, which with the same machines and equipment either cool or heat as required, as well as clean, humidify or dehumidify, have been developed and are in successful operation. The intriguing phenomenon is that during the heating cycle more heat is made available than is actually in the energy required to operate the system. Efficiencies are often as high as three hundred per cent, for the reason that heat is taken from the outdoor air or water source, and the only energy required is that needed to make this heat usable. Applications of this system will probably be confined to climates where outdoor air is above the freezing point, or where there is an abundant and inexpensive water supply."

KINETIC

FREON

REG. U. S. PAT. OFF.

safe refrigerants

"FREON" REFRIGERANTS are widely used in heavy duty air conditioning and refrigeration units. Non-toxic, non-explosive, non-flammable, non-irritating and colorless, they are the world's safest refrigerants. Kinetic Chemicals, Inc., Tenth and Market Sts., Wilmington, Delaware

"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.

The advertisement reproduced here appears in the December issue of "Architectural Record."

Kinetic has published Mr. Rathbun's statement as the sixth in a series of discussions by leading authorities on the post-war markets for air conditioning and refrigeration. It is designed to build goodwill for you today, and to stimulate the thinking and action of the men who are designing and planning the buildings of tomorrow. *Kinetic Chemicals, Inc., Tenth & Market Streets, Wilmington, Delaware.*

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KEEP ON BUYING WAR BONDS!

PUBLISHED IN THE INTEREST OF AIR CONDITIONING AND REFRIGERATION

What Are The Postwar Prospects For Commercial Refrigeration?

They're Swell, Says Terhune, But You'd Better Start Making Your Plans Now

By E. A. Terhune, Sales Manager, Electric Refrigeration & Air Conditioning Division, Servel, Inc.*

It is conceded by practically all far-thinking leaders in this country today that postwar planning has a vitally important place in our present war program, and particularly in reference to winning the peace after the war. There is a universal agreement in this country that the winning of the war is the issue of paramount importance and that we must, at the same time, start planning now to hold the future under control after the war.

The principle of free enterprise has been the foundation in the rapid development of success of this country and its traditions and practices must be preserved if we are to expand our growth and full opportunities. A chaotic postwar condition would undoubtedly result in the further promotion of the very principles of bureaucracy and totalitarianism, against which we are fighting in this war.

It is the duty and privilege of every business man in this country to do his part in the preparation of a lasting home economic peace in the same way that he now goes "all out" in the war effort. If private business does not assume leadership in postwar planning, we can then only expect the bureaucrats and political mongers to attempt to do so.

*Talk presented at the St. Louis Chapter of the American Society of Refrigerating Engineers.

Opportunities Are Before Us

The opportunities are before each one of us—whatever our capacity or position—to participate in the thinking and planning toward the postwar economy we hope to achieve. The best way we can accomplish this purpose is for each one of us to participate in the postwar planning problems of our own industry and our own individual businesses and this can be accomplished effectively only through the proper collaboration.

Generals plan on a long war—business executives on a short one.

It has well been said that postwar planning cannot effectively be done in a vacuum. A hermit, secluded in his cave up in the mountains, cannot do a constructive job of postwar planning, because success in the postwar world will be dependent on making plans that dovetail with the plans of other people. The hermit might decide to raise horses but he would find no market for them unless someone decided to make saddles, buggies and harness. Primitive though this example may be, it is no more far fetched than some of the so-called planning that goes on behind closed doors in executive offices today.

Too many are basing post-war planning on pre-war ideas, and with the hope of keeping his own plans "secret," many a man isolates himself from the thinking of others who may have the real key to his future success.

It seems quite apparent that we must pursue a course in exactly the reverse direction. Instead of "Herhits" we shall be "Gypsies" going out on the highroads of our industry and "trading" ideas with everyone who is seeking an answer to our common problems.

Problem Has 3 Phases

The scope of this subject is of such magnitude that I frankly feel it is presumptive for me to even attempt to cover it in a discussion at such a meeting as this; but having taken the assignment, I would like to present to you an analysis based on three phases of the problem:

First, the general economic condition in this country which we must face in the postwar period; second, a very general and simple analysis and plan for postwar action in the commercial refrigeration industry in particular; and third, a prediction of things to come.

There seems to be little doubt but that we are entering into a postwar era in three stages of development rather than an abrupt change on the signing of an armistice as was the case in World War I. Assuming that Germany will be licked some time during 1944, we can then look forward to a period of about a year that will be devoted to subduing the Japs.

This will mean, in a large measure, a different kind of warfare and therefore, a marked difference in the overall war production in this country. I think that during this period we can anticipate a loosening up of certain materials from the present rigid government restrictions and the approval for some manufacturers to resume essential civilian production of certain commodities in a limited manner. The dire need for commercial refrigeration equipment should certainly bring our industry into that category.

2 Years to Cool Off

After our European and Oriental enemies are beaten, we are faced with the probability of a cooling off period of a couple of years, during which the conversion from war to peace-time operations will be very largely completed. Under these conditions we can then look forward to the real concentration on postwar operations to begin sometime in 1946.

It will, however, be too late to start making postwar plans when that time arrives. By then business in this country will have largely lost a customer which is now consuming half of its output—the U. S. government. By then we will be faced with the reality of millions in the armed forces and in war work who will be searching for jobs in a peace-time economy.

The first essential for a successful peace lies in the procurement of jobs for these people and the procurement of jobs is dependent upon the ability of private industry to create new work through new products, new processes, new factories and a new power of distribution.

Private industry must supply an employment level of approximately 55 million, with an additional one million still in war production and two million more remaining in the armed services. It is utter folly to consider that Federal Public Works Programs can suffice in doing the "lion's share" of this big job. Private industry must assume the greatest share in the responsibility of supplying new levels of production and distribution.

Employment Not Simple

It has been estimated that the potential increase in employment during the war will amount to almost 10 million jobs and it is also conceded that two millions of unemployed is a practical maximum. The problem is obviously not simple.

We must have not only the products to build, but the factory space and machinery of the right sort to do the job. Even that will not be enough. We are faced with one of the biggest selling jobs the world has ever seen to turn the peoples' wants into an effective buying demand.

There must be a willingness to buy a particular product and the purchasing power to complete the transaction, and it is the pursuit of that problem that offers salesmanship the biggest opportunity of all time in the postwar era to come.

This situation brings up the question of what each one of us can do about it and just how the commercial refrigeration industry can draw a pattern of postwar action that will be effective.

War-Weary World Will Welcome New Ideas

New ideas will be more easily promoted than in the post-depression 30's. A war-weary world will be more prone to accept advanced designs and changing methods, just because it separates them from the past, if for no other reason. The manufacturer who is prepared to offer these new products and volume at a fair price, should enjoy a rapidly expanding market.

Each producer should start with the study of the utilization of his own productive facilities and similarly, every distributor, dealer and service man should analyze the scope of his postwar possibilities in terms of such limiting factors as his local market, his finances and his physical business layout.

However, very shortly each company will arrive at the point where its plans must be hinged on what may happen in the entire refrigeration industry and finally, in all industry. For these reasons it becomes very evident why it is highly important that we survey and study our common problems.

As a pattern for postwar planning, the refrigerated fixture manufacturer may well study his answer to these general problems:

(Continued on Page 9, Column 1)

1. "Postwar planning can't be done in a vacuum."

2. "Condensing unit manufacturers definitely do not have control of the thinking of the industry and its distributing channels."

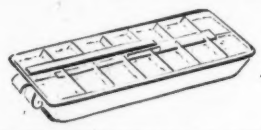
3. "The commercial refrigeration market of tomorrow indicates many interesting possibilities."

The above is just a sample of what E. A. Terhune says about commercial refrigeration prospects in the accompanying article, the first of a series of two.

★ 6,000 men and women of Inland are working with their hands and heads to produce the tools of Victory. And in their *minds* is the realization that they, too, are fighting this war—that their efforts and their spirits must not falter.

They are proud, too, in the knowledge that many of the very weapons they are forging must ultimately find their way into the service of the 1,000 Inlanders who are on the battle fronts. It is from such inspiration that great industrial achievements are born.

At Inland, pride of achievement, heightened by war and maintained by the assurance which comes from knowing how, will continue to be a definite force when we again produce the goods of peace.



INLAND MANUFACTURING DIVISION
General Motors Corporation *Dayton, Ohio*

Illustrated is one of the series of Inland designed posters appearing throughout our plant and the plants of our numerous sub-contractors as part of our war production drive activities to encourage our employes to Beat Their Quotas of production for—

VICTORY WORK BY INLAND

Enlisted for Victory are the following products of Inland's Laboratory Controlled Manufacture: carbines; plastic helmet liners and extinguisher horns; tank tracks, clutches; Army truck clutches, brake linings; gun sights, shoulder rests; Army and Navy aircraft steering wheels; Marine engine motor mounts; parts for airplane motors, torpedo boats, submarine chasers, landing craft and artillery lighters.

INLAND
INLAND MANUFACTURING
Rubber, Metal, Plastics

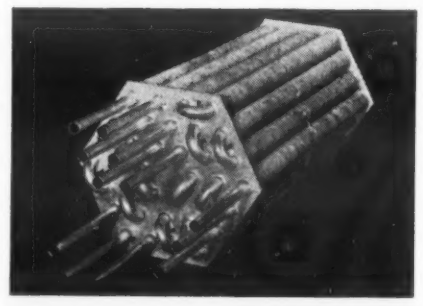
MAKE AMERICA STRONG
Keep on Buying War Bonds

ATTENTION
LEADING MANUFACTURERS OF SMALL REFRIGERATORS!

Swiss refrigerator manufacturer desires business connection with firm which can supply him with cooling machines for household refrigerators.

Please write to:
HANS EISINGER
24-28 Aeschenvorstadt
Basel, Switzerland

ROME-CONDENSER
★ Jointless Type ★



Rome Water Cooled Condenser Coils insure trouble-free condensing equipment. Used by leading compressor manufacturers.

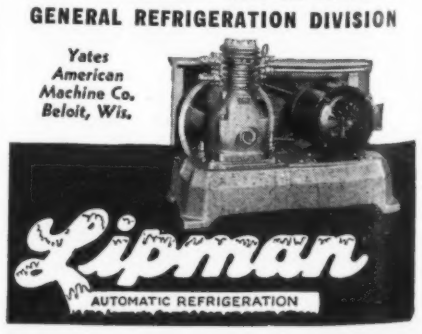
ROME-TURNEY RADIATOR COMPANY
222 CANAL ST.
ROME, N. Y.

WAR INDUSTRIES NEED REFRIGERATION

The use of refrigeration in industry has been greatly accelerated by the war. In peacetime this expansion may logically be expected to continue. Write for literature.

GENERAL REFRIGERATION DIVISION

Yates American Machine Co. Beloit, Wis.



7 Questions Must Be Answered By the Fixture Manufacturer

(Continued from Page 8, Column 5)

1. What type of equipment can the factory best produce. (Such as woodwork, sheet metal, plastics, coils, cabinets, fans, valves, etc.)

2. Within the limits of past experience, finances and type of product, should the manufacturer approach world-wide, national or local markets?

3. Through what marketing channels should his merchandise be sold—such as through distributors, jobbers, dealers, manufacturers, agencies, factory salesmen or by mail order?

4. Considering plant layout, manufacturing and distribution experience, just what refrigeration products will be the most profitable to concentrate on, in the postwar period?

5. What are the market potentials of the various products being considered—and this should include a study of the percentage of national population who are potential users, the degree of acceptance already built up, the percentage of the potential market already sold, the potential of the total industry volume and its probable rate of increase in the immediate postwar years and what percentage of that total volume the individual manufacturer or distributor can expect to get.

6. What merchandising program will be set up to organize the marketing machinery of the business, to train sales personnel and to supply an advertising and promotion program to support the action?

7. What is the answer to such management problems as the capital structure necessary to operate according to plan, the necessary personnel changes or additions within the organization, the requirement for new cost studies, the financing requirements to support the expected sales volume and the availability of materials necessary for initial production?

What About Materials?

Who, for example, can say definitely, without postwar study, whether the insulation he uses in postwar products should be of felt, rock wool, corkboard, Fero-Therm, or Santocel? Can he be sure that the porcelain-on-steel of yesterday will be the material he should use in the postwar era for the outside or lining of his cabinet, or should he use aluminum, stainless steel, moulded plywood, fibre board, glass or plastics? Which might offer the opportunity of such advantage as lighter and cheaper construction and the elimination of paint, porcelain or other finishes?

These and many other similar problems will come to the minds of all of you if but a little thought is given to the subject, whether you be the producer or the distributor of the merchandise.

Let us for a moment consider the position of the commercial refrigeration industry and what we may expect in its development in the postwar era. In order to give you a more concrete idea of the industry volume, I have made up this chart showing the number of condensing units sold for the past eight years beginning with 1936 (see Fig. 1).

These figures cannot be absolutely guaranteed but I believe they are as accurate as any yet produced. They are a composite of such figures as have been partly published in the industry and with allowances made for certain factors.

Fig. 1—Sales of Condensing Units

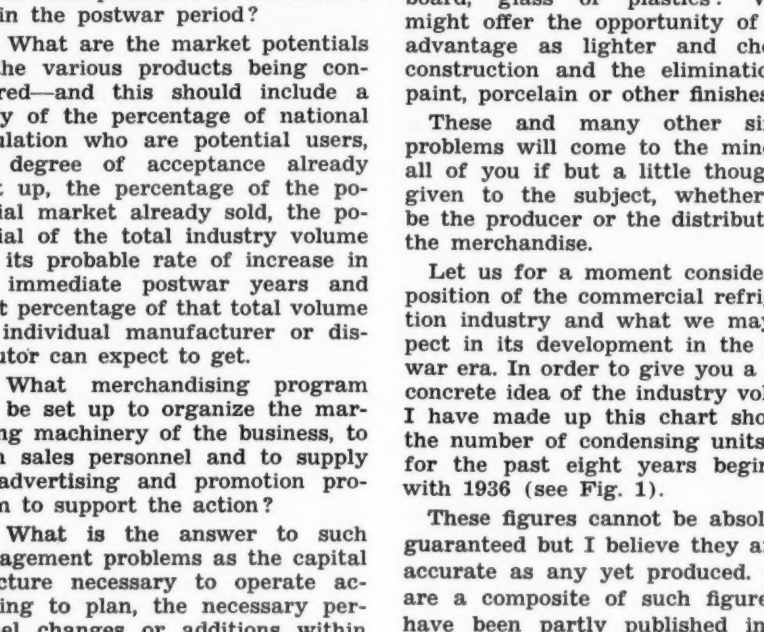


Fig. 1 shows condensing unit sales over an 8-year period.

The production curve of condensing units is a fairly good indication of the trend of the industry as related to other products such as refrigerated fixtures and the like. The blue line gives the total condensing unit volume over the various years.

The expectancy for 1944, industry wise, is for probably a slight increase of 50,000 units over the 1943 low point, on the assumption that manufacturing of commercial equipment for essential civilian uses will be permitted to a limited extent.

On the other hand, should restrictions be held at the present level resulting in limiting sales to the armed forces and essential war work applications, then we may expect an even slightly lower volume in 1944 as compared to 1943.

Results of Survey

As a part of the Servel postwar planning in our Electric Refrigeration and Air Conditioning Division, we produced a booklet entitled "The Postwar Era—Commercial Refrigeration and Air Conditioning," and our field organization personally presented this story to the majority of the refrigerated fixture manufacturers in the country, excluding the West Coast. Each district manager made out a postwar survey report which, when summarized, gave some interesting information.

Among the generalities, we found that about one-half of these allied manufacturers have continued active in refrigeration during the war; that about 75% of them are interested in national distribution in the postwar era and 25% of them only locally (such as in the vicinity of their factory or a few states adjoining); that about one-half of them sell their product locally at retail in addition to their wholesale distribution. Approximately 60% of them are interested in expanding their dealer organization in the postwar period. About 60% of them had given some thought to postwar planning and the balance had done none.

Our inquiry as to their plans for concentrating on certain postwar products brought out the information that slightly over one-half of them expect to build home or farm freezers; one-quarter of them plan to become active in air conditioning, principally in the production of either store coolers or three to 10 tons or of room coolers of one-half to two tons; about 35% of them intend to continue their manufacture of store fixtures as a principal endeavor and from 10 to 15% of them expect to specialize in such refrigerated equipment as vending machines, milk coolers, special apparatus, beverage coolers, truck refrigeration, ice cream cabinets, ice cream freezers and beer cooling equipment.

Fig. 2—How Units Are Distributed

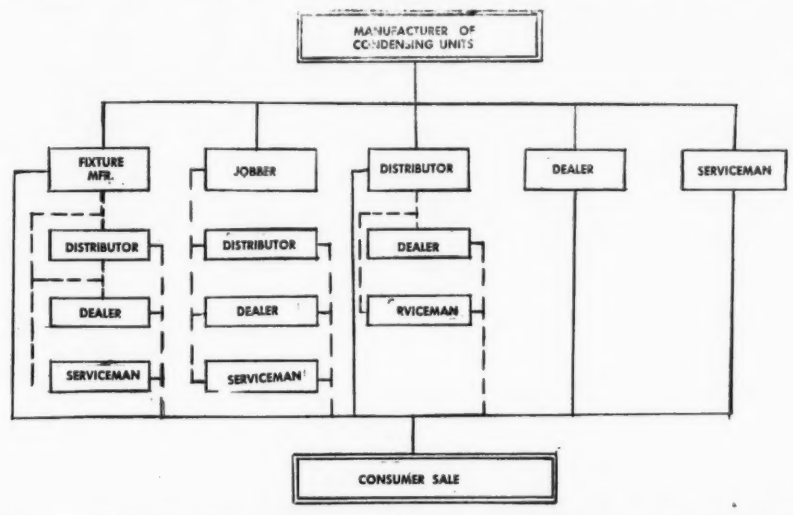


Fig. 2 outlines the possible paths of condensing unit from the manufacturer to the ultimate consumer.

Don't Control Thinking

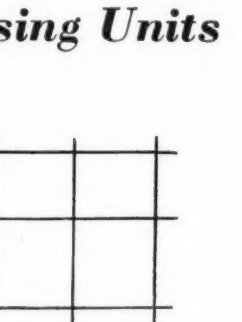
In differentiating between the domestic and commercial phases of the refrigeration industry there is one factor which stands out predominantly: condensing unit manu-

(Concluded on Page 10, Column 1)

METHYLENE CHLORIDE

Refrigeration Grade

Highest Purity



Important Don't let idle cylinders or drums hold up supplies now available. Empty all containers promptly. Look through your stocks and warehouses for any empty containers . . . *and return them promptly*

Pure . . . dry . . . uniform . . . manufactured to meet the rigid requirements of the refrigeration industry by du Pont, pioneer producer of Methylene Chloride and other popular refrigerants. Conditions permitting, current requirements for refrigeration purposes can be supplied, subject of course to the regulations of the War Production Board. Order what you need but please do not stock up unnecessarily. Electrochemicals Department, E. I. du Pont de Nemours & Co. (Inc.) Wilmington, Delaware.

DU PONT

METHYLENE CHLORIDE

BETTER THINGS for BETTER LIVING . . . . THROUGH CHEMISTRY

Generals must plan for a long war . . .

Sales Executives must plan for a short one

"Get there fustest with the mostest"

CALL IN SERVEL

Early success in the post-war business world will depend largely on two factors: First, having new products with maximum appeal. Second, being ready to make prompt delivery of these products. Late comers (as well as those who rely solely on pre-war production designs) are likely to find sales disappointing.

You can get a quick picture of *your* company's potential competitive position in the post-war market by answering these simple questions:

- What is my company doing about new materials that war research has developed?
- What are we doing about improved production methods?
- What are our plans for broadening distribution?
- How soon after peace comes will our post-war products be ready for sale?

Servel stands ready to help you make and put into operation definite plans for an aggressive post-war program. Servel's engineering department has developed a modern line of condensing units to meet your needs. And Servel's sales staff is busy surveying methods, compiling data and collecting facts that will help to guide your post-war production and distribution.

No matter what type of refrigeration or air conditioning equipment you contemplate, it will pay you to call in Servel *now*. Don't let victory catch you napping.

SERVEL, Inc.

ELECTRIC REFRIGERATION AND AIR CONDITIONING DIVISION

Evansville 20, Ind.

Servel Condensing Units for Every Cooling Need

1. Store Fixtures
2. Milk Coolers
3. Home Lockers
4. Beverage Coolers
5. Vending Machines
6. Air Conditioning
7. Locker Plants
8. Stratosphere Testing
9. Coolant Cooling
10. Truck Refrigeration

THERE IS NO SUBSTITUTE FOR EXPERIENCE

Condensing Unit Volume Will Reach Million In 1948, Terhune Believes

Many New Applications Predicted

(Concluded from Page 9, Column 5)

facturers definitely do not have control of the thinking of the industry and its distributing channels as is pretty well the case with manufacturers of domestic refrigerators. The sales channels of the commercial refrigeration industry are indicated on the next chart shown (see Fig. 2).

I have already mentioned that the entrance into a postwar period will not be abrupt but rather one of gradual evolution over a period of possibly four years. The years 1945 and '46 will probably constitute a "flush period" in which there will be a transition under continued government restrictions, such that the 1945 season will bring the industry back to its prewar peak of about 450,000 condensing units a year and in 1946 an increase to 600,000.

The years 1947, '48 and '49 will probably be a period of stabilization in the postwar era and are expected to result in a unit volume of approximately 800,000 in 1947 and approximate 1,000,000 in 1948 or 1949.

1949 Looks Good

Beginning in 1949 we should begin to see the full effects of the new potentials to be opened up in the commercial refrigeration industry as affected principally by the refinements in engineering development and merchandising of several postwar products which offer a volume that was not even considered possible in this industry several years ago.

In connection with postwar potentials it may be interesting to see an original chart which I have called "The Industrial Development Curve," which holds true for all types of specialties made and sold. From the inception of the product in the engineer's brain (where there is a zero percentage of saturation) to the point of approximately 10% saturation (which I call the point of initial public acceptance) we have the so-called "missionary period" of negligible volume and no profit (see Fig. 3).

In the initial pre-war years air conditioning, oil burners and electric ranges were included in this category although air conditioning and electric ranges appear more recently to be emerging into the next stage.

From 10% to 40 or 50% saturation we come into a period called "The Profit Era," which is one of progressive volume increase, high selling prices, high selling costs and specialty selling methods. From about 10% to 45 to 50% saturation this profit era period shows approximately a 45 degree escalator climb in sales.

Saturation Will Drop

Commercial refrigeration in the years up to 1941 has definitely been in this "profit era" stage as is further indicated by the first chart shown on total industry volumes since 1936. It might be a fair estimate to say that in 1941, and on the basis of products then produced in commercial refrigeration, we had reached something like a 40% saturation point.

It is, however, very clear that the the introduction of new products in the commercial refrigeration field will throw the saturation point back to around 15 or 20% which means that it will start at the foot of the steep escalator climb in the postwar era.

At roughly a 45 to 50% saturation point, we come into a "stabilized industry" period of large volume merchandising rather than specialty selling methods, low prices, trade-ins, and low selling costs. Vacuum cleaners, washing machines, domestic refrigerators, radios and automobiles have already reached this point.

Possibilities Interesting

The commercial refrigeration market of tomorrow indicates many very interesting possibilities. In spite of surplus plant capacity in industry for war production, there is a growing shortage of plant facilities in non-war industries for which new plant construction has been rigorously curtailed. There is thus a nucleus of postwar demand for manufacturing buildings and plant equipment requiring refrigeration equipment in such industries as food products and others requiring industrial air conditioning.

Results of Migration

The migration of workers into many industrial centers will bring forth the construction of additional schools after the war to meet the needs. New educational requirements and higher standards will stimulate the modification of present buildings. Special commercial refrigeration equipment will be required in cafeterias, laboratories, libraries, auditoriums, museums and the like. Both water cooling and air conditioning equipment will be in demand. The increasing use of hospitals by the general public, prevalent before the war, is sure to continue when the services of professional personnel will again be available on a peace-time scale.

Expanded public health program feature prominent in postwar plans and in discussions of broader social security coverage. Hospitals of permanent character will be needed to take care of war veterans. Also, new facilities will be required as a result of new medical and surgical practices developed during the war. The demand for refrigeration equipment in connection with this expansion will be considerable.

Govt. Spending Will Help

The Federal Government Public Works Program as presented to Congress in March, 1943, includes about one-third of a billion dollars for public buildings of which approximately $200,000,000 requires only presidential authorization to go ahead. State and municipal programs also include large appropriations for public building projects for many of which, plans and specifications are now being drawn and many of which will probably involve commercial refrigeration equipment in one way or another.

In considering the products of a postwar market, we must consider what Allied Fixture Manufacturers will produce. There will undoubtedly be a marked expansion in the production of the pre-war commercial refrigeration run-of-mine products such as store fixture equipment, ice cream cabinets, beer and beverage coolers, water coolers, milk coolers and industrial equipment.

The pre-war potential for this type of stabilized equipment will be far exceeded by the demand for commercial refrigeration machines in the production of other new postwar products that have as yet hardly been introduced on the market.

In addition to increased volume from new products, we must not fail to recognize the important replacement market now being evidenced through a mortality of from 8% to 15% for various types of equipment. Of even more importance is an untapped and tremendous global market that our export departments have never yet approached.

'Side Lines,' But Good

Among those which will enjoy a fast growth, but which I believe will be but "side lines" in the industry will be frozen food lockers, ice cream freezers and truck refrigeration. There is also new industrial equipment yet to be developed such as machines for instant chip ice in restaurants, cold packs for hospitals and anesthesia by refrigeration, egg coolers (eggs are dipped in oil and frozen and are then available in the fresh state for an indefinite period), flash freezers at temperatures from 20 to 50 below zero, bed coolers, vacuum jacket milk can coolers for long hauls and many other specialized applications in the industrial and scientific fields such as for testing equipment.

Among the major products which will emerge in the postwar period we will find vending machines for soft drinks, milk, fruit juices, ice cream, frozen foods and other products. The possibilities in this field have hardly been scratched in this industry.

(To Be Continued)

Fig. 3—Development of Industry

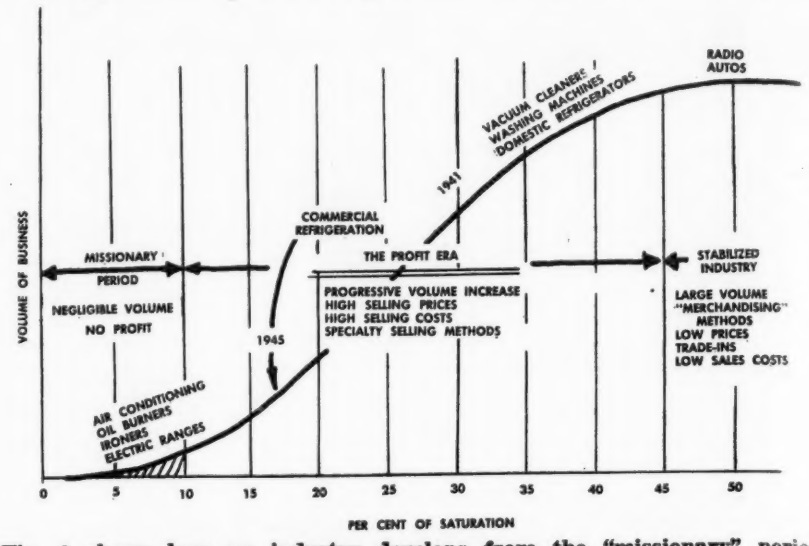


Fig. 3 shows how an industry develops from the "missionary" period through the "profit era" to the "stabilized" stage.

Canadian Apple Growers Seek Ways to Obtain More Storage Space

HALIFAX, Nova Scotia, Canada—How to obtain more cold storage space is the problem that is uppermost now in the minds of Canadian apple growers in Nova Scotia's Annapolis Valley.

The question had been discussed at a number of meetings held by Valley fruit growers, and really came to a head late in November when the Nova Scotia Apple Marketing Board reported that apples of the MacIntosh variety were overmature and were beginning to break down.

Growers found this particularly disastrous, since the MacIntosh variety has been planted and grafted extensively in Nova Scotia in the past 10 years with the result that the quantity of this fruit has increased every year. In addition, MacIntosh crops will be even heavier in years to come as the bearing surface of trees now planted increases.

An official of the Marketing Board declared that if sufficient cold storage space were available, the trouble with breakdown would have been averted. A prominent Nova Scotia agriculturist states that now is the time to give careful thought to the question of more cold storage space before another crop is grown.

ALCO

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Solenoid Valves
Float Valves

But, more seriously, if you plan to build air conditioning units in the postwar period, it will pay you to investigate Alco Engineered Control Valves for improved performance of any unit—the sole reason for their use in leading units before the war

You are invited to send for bulletins, data, and to consult with our engineering staff on valves best suited to your requirements.

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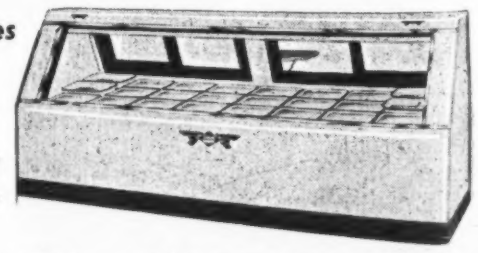

SHERER-GILLETT CO., MARSHALL, MICH.

Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1)

ground for this war. He attended Culver Military Academy, and was an instructor at Morgan Park Military Academy before becoming a Seahawk. He is an expert rifleman.

His old man, who is bustin' his buttons, was a Marine in the last war. Since Jimmy won the rasslin' championship, 'tis said that "Zeke" has been flexing his biceps and offering to take on anyone, anywhere, for dollars, dimes, or buttons.

Get Your Gas Now

Be sure to get your appeals for more gasoline—if you need it—all set and in the clear before the first of the year.

Dope is that military demands are going to skyrocket in the first half of 1944, and that civilian gasoline supplies will be pinched tighter than ever. "A" coupon values seem destined to be cut, and the "B" and "C" lists pruned again.

Materials for Experiment

It isn't generally known yet, but WPB is approving applications for strategic materials to be used for postwar product experimental purposes.

If you can show that your thinking and planning is sufficiently advanced and sufficiently desirable, you may be able to get materials for that project you have been considering.

You won't be robbing the Army or Navy if you apply and receive. On the contrary, your materials will come from mounting stockpiles the disposition of which is beginning to concern their custodians.

Example of the kind of experimental research for which substantial materials grants have been made: lightweight diesel engines for passenger cars. Diesels may help offset our dwindling oil reserves.

German Dilemma

Two new advantages possessed by the Allied air commanders present the German Luftwaffe with a headache for which no aspirin can offer relief.

They are (1) the Foggia airbases in Italy, which will soon be ready; and (2) the supply in plentiful numbers of the potent, long-range P-47 Thunderbolt escort fighter.

Hitherto the Nazis have employed fighter planes to harass the accurate Flying Fortress bombers all along their route over Europe to their targets. The Nazi fighters have been based on fields scattered over France, Belgium, and the Netherlands.

But now the Thunderbolts can escort the big bombers all the way to their targets and back. Medium bombers are tearing up the Nazi fighter plane fields. And bombers based on Foggia can make shuttle bombing forays to England and return.

So now if the Nazis continue to scatter their fighter strength, the Americans can destroy them piecemeal. On the other hand, if they do the militarily sensible thing and withdraw their fighter strength to the homeland for concentrated defensive purposes, they will markedly hinder their chances of stopping a cross-channel invasion from England.

It remains to be seen how long it will take the sane elements in Germany to throw off the Nazi yoke.

Metal Notes

It is expected that allocations for the formerly scarce molybdenum, chromium, tungsten, and vanadium will be ended by the first of the year. However, the use of alloy scrap will still be insisted upon. High-grade scrap is returning from the Mediterranean in ever-increasing quantities.

Molybdenum and chromium are now the most-used elements, with nickel relegated to third place. The war-developed "NE" alloys now account for almost one-third the national production.

Budd's stainless steel air cargo planes are a pronounced success. They'll be prominent in the postwar picture. The Kaiser-Hughes cargo plane, embodying extensive use of plywood, is yet to be heard from.

With the aid of skillful metallurgy a rival for the helocopter has been developed and is in use in the Atlantic against submarines. It has postwar possibilities where speed is a factor along with handling ease.

You can look for many unusual developments with light metals, now that aluminum is in abundance and magnesium in embarrassing oversupply.

Economy vs. Politics

Before the war one used to hear international economic experts argue that "Hitler has the right idea but is going about it the wrong way."

No doubt some will cry "traitor" even to hear this argument exhumed. Nevertheless they can look for this idea to have weight at whatever peace settlements are made.

The idea is that a Europe split up on nationalistic lines is an economic monstrosity. To get a glimpse of this "monstrosity" one has only to imagine a United States in which Nevada, Utah, and New Mexico refused to eat grain produced in Nebraska and Iowa, in which Louisiana and Missouri wouldn't buy automobiles made in Michigan, in which Ohio's refrigerators couldn't be sold anywhere but in Ohio.

The highdome economists attached to our State Department are now saying that after the war there may come an extraordinary reorganization of the world, embracing both political and economic ruling bodies.

They say it may be impossible to submerge the uneconomic political divisions as to races and nations in Europe. But, sponsored and enforced by Britain, Russia and the U. S., economic superdivisions could be superimposed upon the nationalistic political boundary lines.

It is said that the Big Three can no longer afford to underwrite the trade bottlenecks of nationalistic, traditional, antiquated political barriers.

Realistic Russia

In this connection, watch for Russia to get what she asks for at the "peace table" (which may be a continuing affair). The realistic Russians, who feel they have actually won the war against Germany, may be expected to press for dominance of the Baltic and the Balkans.

The Balkans, they point out, have been the tinder-box of Europe, especially since they were relieved from Turkish domination. It is the Russian contention that the hereditary landed gentry in the Balkans must be unhorsed, and that the exploited peasants there must be given a real stake in the preservation of peace.

Even the Brtish find it hard to quarrel with that position, although as usual there are royal relations involved.

Whether or not the superseding Russian methods of "preserving the peace" will meet Anglo-Saxon standards of morality is another question.

Action Everywhere

Explosive events in the war are to be expected. So much can happen in so many places that the tense follower of the communiques can be forgiven if he spends his nights with ear glued to the radio.

Movements now in progress in the Pacific are only the beginning of the possibilities open to such vigorous aggressors as MacArthur, Halsey, and Nimitz. The Russians might give us use of those Siberian bases, too!

In the Near East, the British Ninth and Tenth armies in Asia Minor are spoiling for a fight. The Turks are ready to move their million-man army into the fray. (It still needs experience in the use of motorized equipment, however).

The seasoned American Seventh army and the British First have been re-equipped and strengthened. Sardinia and Corsica have been prepared as jumping-off places. Giraud and DeGaulle are anxious to move the French North African army into battle. Italy has perhaps 50 divisions intact and in good order for use as occupation troops.

As for Britain, the "tight little isles" now support the greatest concentration of troops in military history. The submarine menace has been broken, and supplies are piling up. Something is bound to break, and soon.

Japan In For It

When Germany is defeated, or "surrenders according to plan," Japan is in line to catch the worst hell ever visited upon any country, ever.

You can envisualize the odds when the British fleet is added to the astronomical American Navy—plus the rehabilitated French and Italian warships.

But that isn't all. The two largest air fleets in the world are now based in England. They will be available. The third largest air fleet (combined) is in the Mediterranean. Add to these the German airfleet and the German navy and the German submarines!

And then, the Russians. It should not be overlooked that the Moscow declaration included China. That was a direct slap at Japan.

In effect, Russia has said to Japan: "Come on and get us, big boy, if you're tough enough."

To protect her national honor, Japan cannot afford to ignore that insult—unless, as the American Navy believes, she indeed is licked on paper and can only prolong the final day of terrible reckoning.

Subsidies

The home-front fight over subsidies for farm produce is not the simple assault on the inflationary embattlement which some politicos and editorial writers would have you believe.

Actually, the farmers are not so much interested in getting public-be-damned higher prices as they are in resisting bureaucratic domination.

To effectuate the Administration's food subsidy program would call for an involved, questionnaire-laden system of bureaucratic controls which might remove almost all vestiges of independence from the farmer. And his independence is the farmer's most valued asset.

Farmers fear that, in the train of subsidies, collective farms on the Russian style would follow. Practically, they say that they can't farm all day and fill out questionnaires all night.

Something fundamental to our American way of life may be at stake here—something worse than temporary inflation.

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Keep Surplus Materials Away From Speculators

SMART manufacturers are now engaged in reducing their inventories of formerly scarce materials down to the minimum. Stocks of light metals, particularly, are piling up in warehouses, thus removing all reason for hoarding. And the fear of the contract concellations which will follow on the heels of Nazi capitulation is pressing manufacturers to convert inventories into finished goods and cash as rapidly as they can.

There is another threatened surplus, however, which worries distributors, dealers, jobbers, and manufacturers alike. That consists of military overstocks of finished goods. Will these be dumped? Will we have a repetition of the Army-Navy stores which were a thorn in the side of "legitimate" merchants after the last war?

DUMPING WOULD REALLY MESS THINGS UP

Currently the war agencies are hoarding vast stocks of nearly everything that human beings use. Although nobody seems to know exactly, some have estimated these stocks as having a present value of 25 billions of dollars. Dumping could cause an awful mess.

No policy for the liquidation of these surpluses has yet been evolved. Informally, it is said that the Army and Navy, recalling frugal Congressional appropriations in the past, will want to hang onto as much of this stuff as they can use in the next 10 years.

Next, it is said that federal, state, and local governments can use some of these stocks. After that will come the bottomless pit of Lend-Lease and foreign rehabilitation needs.

Disposal of surplus Army-Navy goods may not be so simple, however. To be reckoned with is the tremendous inflationary demand for goods which will be heating to a boiling point in America after the war. Political pressure to "take the lid off" may be well-nigh irresistible to Congress.

Yet, at the very time when the public will be celebrating its release from the tensions and self-denial which accompany wartime patriotism, our stocks of consumer goods will probably be at their lowest point in history, and months of reconversion may be ahead of manufacturers.

WHY NOT MAKE USE OF REGULAR SALES CHANNELS?

Why not an orderly liquidation of Army-Navy surplus goods *through established distribution channels?* Products could be resold to their original manufacturers (at depreciated prices), and then moved by these manufacturers in orderly fashion through their regular distributors, jobbers, and dealers to a hungry public. Such a course would have several desirable results:

(1) Help liquidate part of the national debt.

(2) Reduce inflationary pressures.

(3) Tide the public over the reconversion period.

(4) Remove the worry of government competition from large segments of private enterprise.

(5) Provide an equitable distribution of needed goods to the public.

(6) Help keep wholesalers and dealers in business and in healthy condition.

(7) Prevent speculators from making a killing.

CONGRESS MUST ACT TO STOP SPECULATORS

This last possibility is one which deserves especial scrutiny. Unless checked by an Act of Congress, it can be expected that the military authorities will offer their surplus goods for sale to the highest bidder. (This is already being done on a small scale.)

People who buy goods at auction are generally speculators long experienced in dumping and liquidation, people who have no concern whatsoever for healthy market conditions or for orderly, sound distribution methods.

What an opportunity these unprecendented stocks will offer them, unless checkmated!

It can also be seen plainly that release of surpluses to speculators would result in uneven, unfair distribution. It would have the opposite effect of rationing and priorities, and would come at a time when considerable chaos may exist anyway.

One can envisualize hospitals going without needed supplies in some areas while in others night clubs and barbecue palaces could spring up and thrive on the equipment purchased from the speculators.

The socially desirable method of liquidating military surpluses is through established channels of distribution. We can't begin too soon to write our Senators and Representatives on this subject. They will make the decision.

P.S.: One thing you can do is clip this editorial and mail it to your Senator or Congressman.

They'll Do It Every Time

By Jimmy Hatlo

QUOTED

The Farmer and Subsidies

Uncle Sam is sending to the boys in uniform a bounteous supply of Thanksgiving turkeys—turkeys which farmers grew. But attached should be a card stating, "Since war workers can't afford to pay all their bills, subsidies are instituted so you can help pay this delinquent grocery bill when you come home." Farmers, like soldiers, work until the job is done regardless of hours and then, as compensation, ceilings are placed on their products; subsidies are paid, and both groups are bonded to pay the food bills of those whose income never exceeded the present.

Dairymen by the hundreds have gone out of business for lack of manpower and machinery, but the United States Coast Guard gets its milk from Latin America. Evidently the southern neighbors have the equipment, since they are not fighting to save Democracy appreciated here at home. Thus, we have subsidies thrust upon our dairymen while Uncle Sam reaches to the southern good neighbors for milk. Ceilings, regulations, and "high bracket planning" are driving our United States live stock industry out of business at "fire sale" prices. When the meat markets are bare, then Uncle Sam will have an excuse to reach down to South America and bring in meat for our consumption — but our live stock producers will be out of business, except to help pay the subsidized good neighbor policies.

Economists point to the great accumulated earnings of the public. It would be ruinous, they say, to permit the public to have such vast amounts in the banks, and then the planners start in to reduce the grocery bill of this same public by federal subsidies — subsidies that must be paid by the boys who wallow in slimy fox-holes for $50 per month. Strangely, no one wants the subsidies except a few who would do the administering. Farmers know they will help pay every dollar of subsidies handed out to them. They want their pay at the market places—and now, while the public has the money to pay the bill. And farmers know that if soldiers come home and find it necessary to pay part of this 1943 grocery bill, the finger of scorn will point to rural people.

The whole program of subsidies coming from the federal treasury smacks of regimentation, the strangulation of private industry, and the glorification of the state. The time to fight such unnecessary and unwarranted procedure is now while there remains a fighting chance to preserve the kind of an America the boys left, and to which they hope to return. Certainly a Thanksgiving dinner here at home will lose some of its savor if those about the table realize that the boys in uniform might have to pay for it. —THE HOOSIER FARMER.

LETTERS

AUSTRALIAN IMPORTER 'BUSIER THAN EVER'

F. C. Lovelock, Pty. Ltd.
16-20 Young Street
Sydney, Australia

Editor:

It was indeed very good to receive your letter. Have you seen Frank Slessar yet? Since writing you last I have received his permanent address, which is:

Flight Lieut. F. R. Slessar
Care R.A.A.F. Representative
Room 4507, Munitions Bldg.
Constitution Ave., Washington, D. C.

I do not think you will have any trouble in locating him when next you are in Washington—that is of course, if Frank happens to be there at the time. From what I can gather he will be toddling around a bit and at the time of writing he had already kicked off with a few trips to Dayton.

Question: What's new and interesting in Refrigeration? G. F. T.

Answer: Nothing that we know of. F. E. H.

You see George anything that is new and interesting has been bottled up by you folk over there. We out here can only imagine what may be new and interesting after the war.

Of course we get a lot of valuable information from the NEWS and we endeavor to visualize transparent plastic cabinets with revolving shelves, push button start, streamline ice cubes, air conditioned hardware, toe and heel plates and plush lined electromatic gear change.

As for what is actually happening down here—well, we spend most of our time scratching around trying to get bits and pieces for the industry. Defense, as you know, comes first, but that does not make any difference; there are still lots of things such as T. X. Valves, Controls, etc. that we are *hoping* will soon be arriving under lend/lease arrangements.

Actually we here at Lovelock's are busier than ever, and as I have intimated to you before, we are more or less virtually and entirely working for the government.

And what about you, George, going along much the same? Notice that you sign yourself "Yours for Victory" — that's okay with me and it fills the bill, but not conclusive enough.

Yours for Victory in 1944,

F. E. HANSEN

'NEWS IS AN ASSET TO ANYONE IN THE GAME'

Route 3, Box 960
155 Central Ave.
Lemon Grove, Calif.

Editor:

I have received my first copies of your paper and am very much pleased. It is an asset to anyone in the game.

R. L. BROWNE

Two WPB Officials Reveal Barriers To Civilian Production

BOSTON—Ending of war production in certain plants does not mean that there will be a substantial increase in manufacture of less essential civilian goods, declared Charles E. Wilson, executive vice chairman of the War Production Board, speaking before the governors' conference at the second New England War Conference held here recently.

When facilities are closed down the motive is always the same—the benefit of the war effort as a whole, Mr. Wilson said. When it is more economical in manpower, in raw material, and in time—above all, in time—to get an item elsewhere, the decision must be made boldly and without hesitation, he added.

"I hear it argued occasionally that the time has come to relax the limitations of the production of these less essential goods, on the ground that the situation in raw material is easier now than it was," Mr. Wilson remarked.

"Those who advocate this idea point out that cutbacks have made available factories and machines which could just as well be used to make goods for civilians. True, the situation in some raw materials has eased; true, there are some idle factories. But the demands of the war program as a whole are inescapable. We must make first things first.

"Each month, for months to come, this country has got to increase its output of war goods. It can do that only by using its productive capacity strictly for the production of essentials. Or, to put it the other way, it could make an appreciable increase in the production of less essential goods for civilians only by cutting down its production of war goods. This is still a total war," he emphasized. "We have to wage it all-out if we expect to win."

Everything possible will be done to minimize hardships resulting from the sudden cancellation and shifting of war orders, Mr. Wilson promised, but the fact remains, he said, that the shocks which the cutbacks bring are part of the price which we have to pay for this work.

'Essential Machinery' To Be Replaced First

CHICAGO—Over-optimism regarding the possible increase in production of civilian goods next year was hit by C. E. Kohlhepp, director of WPB's Program Bureau, who warned that shortage of carbon steel and manpower will prevent any substantial boost in civilian manufacturing schedules when he addressed the Chicago Association of Commerce here recently.

While the supply of aluminum is adequate and the shortage of copper is more statistical than serious, according to Mr. Kohlhepp, the supply of carbon steel—the basic material for most all military and civilian production—will stay far below requirements during the first quarter.

There was no change in pattern of allotments of these strategic materials between the third and fourth quarters of this year, he said, and he predicted that there will probably be no drastic change in the first quarter of 1944.

"If there is a change,'" Mr. Kohlhepp averred, "one of our first tasks is to replace outworn industrial machinery in essential industries and services."

Retailers 'Reject' Rise In Furniture Prices

NEW YORK CITY—Billings made by furniture manufacturers calling for a 5% price increase on the basis of an expected action by the Office of Price Administration have been refused by retailers here, it is reported.

When OPA decided to reconsider the proposed increase, designed to provide an incentive for manufacturers to continue operations, dealers pointed out that they would be violating price regulations if they accepted the increased billings.

George Hench Heads WPB Air Conditioning Retail Trades Section

WASHINGTON, D. C.—George C. Hench has been appointed Chief of the Plumbing, Heating, Air Conditioning and Refrigeration Section of the Wholesale and Retail Trade Division of the War Production Board.

(Refrigeration here means commercial refrigeration, all household refrigeration being handled by the Electrical Supplies and Major Appliance Section.)

Mr. Hench is well known to the refrigeration industry having been connected with Northern Indiana Brass Co. before joining WPB.

The appointment of Mr. Hench was announced in connection with a shift whereby the former Electrical Supplies Section, the Plumbing and Heating Supplies Section, and the Petroleum Supplies Section of the Wholesale and Retail Trade Division have all been abolished, and the following sections established:

The Electrical Supplies and Major Appliance Section.

The Plumbing, Heating, Air Conditioning, and Refrigeration Section.

Julian Hawks has been appointed Chief of the Electrical Supplies and Major Appliance Section.

Carl Reynolds has been appointed Assistant Chief of the Plumbing, Heating, Air Conditioning, and Refrigeration Section, and Gilbert May has been transferred from the General Supplies Section to this Section of the WPB.

400 Alabama Farms Get REA Power

AUBURN, Ala.—Four hundred additional farms were connected to Alabama's 20 REA-financed rural electric systems during the first nine months of 1943 under an emergency program to extend electric service to farms producing food for war.

On 20 farms recently connected 40 electrical devices were reported installed as follows: 13 water pumps for livestock, 13 electric chick brooders, five feed grinders, four milk coolers, three milking machines and two incubators.

The REA estimated that 56,200 Alabama farms, 24% of all farms in the state, now have central station electric service.

No Fanfare With York 'E'; War Fund Gets Money

YORK, Pa.—There was no formal dinner or entertainment to celebrate York Corp.'s winning of the Army-Navy "E" award Nov. 22, for the money which would have been spent for the affair was donated instead to the local committee of the National War Fund, reports W. S. Shipley, chairman of the board.

It was decided to save food, labor, transportation facilities, and the war production time of the guests by eliminating the dinner celebration, Mr. Shipley explained.

Brig. Gen. H. F. Safford, chief of production service branch, Office of Chief of Ordnance, was the principal speaker and made the award at ceremonies at the county fair grounds.

It's Time To Tell About REFRIGERATION'S HIDDEN SERVICES

Take RUBBER for instance...

THE rubber industry has long valued refrigeration as an important working partner. Refrigeration helps prevent deterioration of raw rubber in storage, recovery of volatile solvents from rubber solution — is used in roller cooling and processing — cools large blocs of rubber to prevent softening and tackiness before cutting — and many other operations. Refrigeration also has aided in solving many of the highly complex problems encountered in wartime's great synthetic rubber program.

A-P DEPENDABLE Refrigerant Valves are, of course, performing their usual accurate, supersensitive control task in many "hidden services" of refrigeration in the rubber industry. But today, it's post-war applications of refrigeration that are receiving major attention at the A-P Research Laboratories. We invite you to put this continuing research to use on YOUR Post-war plans involving precision engineering in controls.

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A quick picture of

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and what it means to

Official O. W. I. photo

Arms for our fighting men

Victory Is Our Business. Building weapons of war has been and continues to be our first and most important responsibility.

We take pride in the recognition we have received for the job being done in Frigidaire's four war production plants.

In the Army-Navy- "E" Flag and Star awarded to us for excellence, and the Army Air Force "A" rating we have received.

Today, more men and women are employed in Frigidaire plants than ever before in our history. And our war production is still mounting.

Only when the whole story of Frigidaire's planning and production can be told, will the full significance of "Victory is our business" be apparent.

What This Means to Frigidaire Dealers

Wartime accomplishments have brought us new knowledge and skills that will benefit the Frigidaire dealer when we return to peacetime production, and surely Frigidaire's wartime record will enhance the value of the Frigidaire name.

Keeping 'em running

Victory Is Our Business on the home front, too. And keeping the millions of Frigidaire products operating efficiently is another important responsibility. For today the nation's food supply must be protected and conserved as never before.

We're proud of the dependable way in which Frigidaire household appliances and commercial equipment are serving their users. Proud, too, of the Frigidaire dealers and service men who are guarding this record of dependability during these trying times.

We are constantly helping this service organization. By supplying vital parts; by providing training aids; and by holding frequent factory and district conducted schools to help dealers train service men.

What This Means to Frigidaire Dealers

Frigidaire service today is building a backlog of customer satisfaction and good will that will mean increased sales for Frigidaire dealers after the war. Right now, this service business is helping Frigidaire dealers maintain income during a critical period.

Listen to GENERAL MOTORS SYMPHONY OF

For Excellence ARMY (E) NAVY *in War Production*

FRIGIDAIRE Division

***Peacetime builders of* HOME APPLIANCES**

WARTIME PROGRAM

Frigidaire Dealers

Helping the user

Victory Is Our Business. The proper use and care of the nation's 20 million household refrigerators is vitally important to the war effort on the home front.

Frigidaire accepted the responsibility of providing needed wartime information . . . not only to Frigidaire users, *but to every user of a mechanical refrigerator.*

Month after month, Frigidaire's advertising messages in leading magazines have given housewives practical information to help them make their refrigerators serve better and last longer.

Similar help has been given in Frigidaire's WARTIME SUGGESTIONS booklet. More than six and a half million copies have been distributed . . . *most of them by Frigidaire Dealers.*

Home economists, group leaders and other organizations were given helpful information for their use.

Hundreds of users, home economists, dealers and others have sent us unsolicited letters endorsing the program's aims and purpose.

What This Means to Frigidaire Dealers

This comprehensive program is keeping the name Frigidaire before the public in a way that will be favorably remembered. And it is also helping Frigidaire dealers maintain identification with Frigidaire and build good will for themselves in their communities.

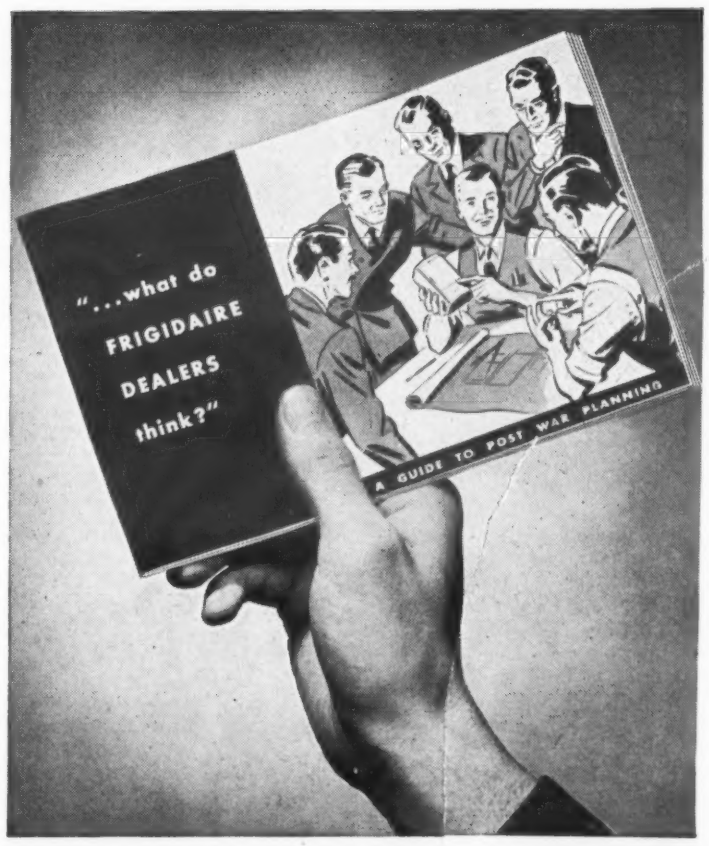
Planning for the future

Victory Is Our Business—so we have little time for future planning. But every moment that we can spare, without interfering in any way with war work, is devoted to this important subject.

Every Frigidaire dealer, large or small, has been given an opportunity to express his views and desires on every phase of our post war business. These views and opinions are being carefully considered, and will play an important part in the planning of our peacetime activities.

What This Means to Frigidaire Dealers

After victory, there will be more and better Frigidaire products for more people. Frigidaire dealers will have the right merchandise, the right selling tools and every support they need to keep on top. Frigidaire's 25-year record of leadership is a blueprint of the future.



THE AIR . . . *Every Sunday Afternoon, NBC Network*

of GENERAL MOTORS

COMMERCIAL REFRIGERATION • AIR CONDITIONERS

Distribution Channels Have Defied Crackpots' 'Death Sentence'

Problems In Selling Field After War Are Analyzed by J. J. Nance

By J. J. Nance, Vice President, Zenith Radio Corp.*

Planning for peace in time of war is difficult — very difficult. There's something about war—the psychology of war—that is extraordinarily stimulating. Imagination as well as our ability to think logically is stimulated to above par levels.

Let's just check that point by briefly reviewing our first approach to war production. We glibly forecasted our ability to produce as being limitless. We were going to start producing planes at the rate of 5,000 a month, then step up to 10-25-50,000 planes per month. "One a Minute" was the production rate forecast for one plant, as I recall the newspaper headlines of 18 months ago.

Resources Are Limited

The hard facts in the case proved to be that we have found there is a limit to our resources of manpower—of raw materials—of food—and other basic commodities. C.M.P. forms, expediting, rationing, etc., have been rather a rude awakening to the realities of our limitations.

And now, with our factories turning our war material in the greatest possible quantities, we have moved on to postwar planning.

I'm all for postwar planning. The more the better. I'm a firm believer that all human relations and activity constitute a continuous process. There is no distinct separation of era from era except in the arbitrary post-facto chapters of history books. The present is concretely and explicably the result of the past. By the same token, events of tomorrow and the next decade are today being determined. So we must assume that if we want certain types of postwar experience, we can definitely contribute toward making it a reality by making plans now.

Going back to the beginning of the war period, the migration to Washington for war orders had hardly begun before statements began appearing that the old channels of distribution were gone and gone for good. Some salesmanagers, alert to the possibilities of publicity, began to issue statements to that effect, very unfairly, in my opinion, adding postwar fears to the worries facing the distributor and dealer struggling with the problem of getting new lines and making operating changes in their businesses so as to stay in business.

Other salesmanagers, sensing the negative reaction created in the trade by the above type of statement, rushed into print with "statements of policy" that they were for the distributor; no change in the postwar period, etc.

But neither, in my opinion, said what they were meant to imply. They, in reality, represented statements of **trends** as viewed by those who made such statements. They represented their best judgment of the postwar distribution methods from where they stood at the moment.

Crackpot Crystal Gazing Caused Confusion

I believe that much of this confusion originated in crackpot crystal gazing, miscalled "social planning" which dates back many, many years. You can remember some of the slogans: "Production for Use," "Reduce the Middleman's Profit," "From Each According to His Ability; to Each According to His Needs."

These classroom theorists, like the orators in Chicago's Bug House Square, painted an appalling picture of things as they are and demanded a violent, immediate change to their idyllic conception of things as they should be. They said, "Mass production has lowered the cost of manufacturing merchandise, but we still have terrific and unjustified costs of distribution. That is wrong," they shouted, "It is explotiation. We must have a planned economy that will dispense with waste between producer and consumer."

Gentlemen, it would be a fine world if each person could devote a few hours to useful toil and spend the rest of the week in luxurious enjoyment. It would be like the South Sea islander who cuts his bread plant from a tree, picks up shell fish along the shore, and spends most of his waking hours, which are few, in pursuit of the finer life.

Theories of Marx Found Wanting by Russians

But the South Sea islander did not have mass production and the problem of distributing vast quantities of merchandise, so it was not until the Revolution in Russia that there was any large scale opportunity to demonstrate these theories.

The first disciples of Karl Marx began their program by wiping out all profits, all individual incentive. It worked fine except for one or two rather important details: factory production was far below the estimates of the planners, and even those goods that were produced failed to reach the ultimate consumer in anything like adequate quantities or with reasonable speed.

Step by step the Soviets retreated from their theories and turned their eyes to the American economic system for guidance. They found that each factory required a boss, and then production began to creep upward. They found that the peasants required a profit before they would sell their food; but they still retained their battle cry against trading profits.

They Changed Their Tune

The result was that it was still impossible to make a profit on goods which had been produced and distribution lagged. So the comrades beat another retreat, again patterning themselves after the American system of free enterprise. They permitted merchants to make a profit, and distribution improved.

The Soviets, by revolution, tried to jerk their country from a seventeenth century civilization to their conception of a twentieth century plus. Then by the hard and bitter experience of starvation and other privations, they were forced to adopt a system which follows closely the pattern developed by the social evolution of America. They applied new names to the changes they made, but changing a name does not alter a fact.

Revolution No Substitute For Evolution

Russia tried revolution instead of evolution and paid a frightful price in blood and privations. Fortunately they changed their method in time to build strength for the present struggle against the Nazis. Let us remember that!

I cannot predict with any degree of accuracy just what our changes of the future will be, but I do believe that the orderly processes of evolution are the only methods by which Americans can continue the social and economic progress which began more than a century and a half ago.

Having spent my business life in the "specialty" field of major appliances and radio, it is only natural that I view the problems of distribution in that light. Distribution in the radio and appliances industries was built on "specialty selling," but for several years prior to the war had reached a plateau. There was little, if any, specialty selling left as the products became standardized and the markets, consequently, became saturated. That's when the volume done by the mail order houses, chains, etc., really grew.

Specialty Selling Revival Likely After War

Looking ahead, it would appear as though the new product of the postwar period may offer the opportunity to revitalize specialty selling.

Today, there is very little specialty talent — that is, trained and experienced talent—available. But there is much in the making. Think of the thousands of our boys in the Armed Forces being technically trained and gaining technical and mechanical experience.

Just as many men returning from the last war with similar experience went into the selling and servicing of automobiles, there will, no doubt, be many new faces in the field of mechanical and technical goods with the return of peace.

At least, all of these men, with their new education, will represent a large segment of the consumer market. And think of the thousands of housewives and future housewives learning in our factories today what makes things tick. They will be intelligent buyers.

There must be a constant scrutiny of the functions required in getting goods to the consumer and to see that they are performed economically and at a fair profit. But competition is the great factor in regulating the cost of distribution just as it is in manufacturing. So obviously, constant alertness and change is essential to prosperity.

'Death Sentence' Was Exaggerated

Now, let's take a look at what's been happening to the channels of distribution during the war period. Here again I must confine myself to the appliance and radio field where I can speak with first-hand information.

When government orders were issued in the Spring of 1942 to stop all civilian production, the opinion was pretty universally held that most distributors or wholesalers and probably the majority of dealers could last the year out on accumulated merchandise stocks and large profits acquired as the result of high prices and big volume prevalent up to the time. Then—1943 would see most of them folding.

Time has proven no guess was ever further wrong.

Distributors Survived And Made Money

May I cite a few figures about our own organization to prove the point. And from all I can learn from my associates in the consumer goods industry our experience has been typical.

At the time we quit making civilian goods and converted 100% to war work, we had 76 distributors. We felt that if we could salvage half of them for the postwar resumption of business, we would be fortunate. The ultimate result, of course, will depend on when that resumption takes place, but to date only one distributor has quit business. And that case was a matter of choice rather than of necessity.

The outlook for survival of the group is excellent. The outlook on the war picture is, of course, encouraging. But my optimism for their survival is based on something more fundamental than the factor of time. It is based on an outstanding demonstration of good old American ingenuity. These distributors are not only winning their battle for survival —they are making money doing it. A remarkable achievement.

These men, who represent a good

(Concluded on Page 17, Column 1)

*Before American Marketing Association meeting in Cleveland.

Looks to Future

J. J. NANCE
Takes a look at recent history before he makes his predictions on the future of the present distribution setup.

Americans know how to take chances

COURAGE to take chances, when there is real reason for taking chances, has made America what it is today.

And nowhere, short of the battlefield itself, has this trait been more finely manifest than in the deeds and the daring of our American Industries.

In times of national crisis—military or economic—American Industry has been quick to step into the breach, and display the same kind of deliberate, realistic, magnificent courage shown by Washington's men at Valley Forge, by Lee's men at Gettysburg, by Grant's tired troops in the Wilderness, by Pershing's expendables in the Argonne—and now by our own sons on present battlefronts around the world.

Because American Industry has dared, it has grown strong; and we, as a nation, have come to lean heavily upon it.

HOUDAILLE* is proud to have played a part in this country's industrial development. And particularly proud to have contributed something to the miracle of production which every hour, every minute is bringing a United Nations' victory closer and closer.

BUY U.S. WAR BONDS

HOUDAILLE-HERSHEY CORPORATION

General Excutive Offices . . . Detroit

*Pronounced **"HOO-DYE"**

Will Manufacturers Drop Their Proven Distribution Methods?

(Concluded from Page 16, Column 5)

cross-section of independent American business men, didn't fold up. Instead, they went out and got lines of non-critical items. They are selling most everything. They also, of course, built up their service business, which had previously been looked upon as a nuisance was now made profitable.

But may I raise this question for your consideration, and I do so with no attempt to detract from the accomplishment of the individuals involved. Could it be that the survival of these distributors should be attributed in a large measure at least, to the channels of distribution they represent being so deeply grooved that they held in spite of the upsetting disturbances of war conditions?

Personally, I'm inclined to think so. At least it is something to think about when considering possible postwar trends in distribution, isn't it? Does it indicate revolution or evolution in distribution changes? The answer, I think, is pretty obvious.

Capitulation of Italy Hastened Planning

Now, here is another interesting observation worthy of analysis. For a year and a half, speculation ran riot on postwar distribution methods. The capitulation of Italy, however, seemed to stop all that. This military event, rightly or wrongly, seemed to cause a great upsurge in postwar thinking and stimulate great activity in distribution circles.

In the first few weeks following, we received more than 160 applications for postwar distributorships. Some, of course, that couldn't be considered seriously, if you wanted to, because they represented idle capital attracted by publicity about postwar products of the crystal-gazing variety.

But the fact remains there was a great rush by private capital for distributorships—which had widely been pretty well condemned as not fitting into the channels of distribution to be established for the postwar period.

Manufacturers Rehiring Their Sales Forces

But even more interesting has been the wild rush on the part of manufacturers to again become active in the field of distribution. Many manufacturers, you know—withdrew their representatives from the field at the cessation of civilian goods. Many of them let go of their road men. And some even disbanded their sales departments.

Since the Italian campaign, however, they have been hiring back and revitalizing their sales organizations. Now, what conclusion should be drawn from their spontaneous outburst of activity and obvious lack of hesitation on the part of the majority of manufacturers? Apparently, in their rush to get set for the possible return to civilian business, they have largely discounted much of the talk about revolutionary changes in the channels of distribution.

I have mentioned these interesting developments as representing one side of the picture. Now, let's take a quick look at the other side of the picture.

In many industries, the war has seen production capacity greatly increased. As a result, there is much talk about new companies entering different fields of civilian goods.

These stories have stimulated much thinking on the part of retailers, especially, large operators, about buying direct from manufacturers. Such thinking has its merits. For manufacturers new in any given field and consequently with little or no consumer acceptance, such a method of distribution offers quick volume and a wedge into the job of building customer acceptance.

To gain these advantages, such manufacturers can afford to sacrifice widespread distribution. Their thinking will probably be predicated on delaying the task of building national distribution. Another factor to be added to this side of the picture is the assumption that the return to peacetime activity will see a new crop of retailers.

Two Major Factors

So there we have the two major factors that may influence postwar channels of distribution.

On one hand, a great upsurge of effort on the part of many newcomers to establish themselves and who can be expected to disregard established channels of distribution.

On the other hand, there has been no evidence as yet of established manufacturers abandoning their present distribution channels.

It is my humble judgment that the decision will not be reached quickly. Here is the reason. The tremendous backlog of accumulated consumer demand with which most industries will return to the marketing of civilian goods, augmented by buying desires created by new product developments, will be sufficiently large to support the present methods of distribution and at the same time permit of such experimentation.

New Marketing Methods Are Sure to Come

New methods in marketing. Certainly we will have them. After the war, the people of this country will stand on the threshold of a time more rich and productive and serviceable to all than the world has ever known. The problem of business is to apply its facilities in such a way as to bring these possibilities into fruition.

And you and I, gentlemen, representing the selling or creative side of business, can be, and should be, the leaders in postwar planning. So let's apply your ingenuity and our resourcefulness to meeting the many and varied problems. There is no reason to doubt our ability to meet changing conditions. We never have failed to meet them.

Portable 5-Ton Cooler Stops 'Griping' of Ferry Pilots

MIAMI, Fla.—One of the worst features of flying a heavy all-metal bomber — the high heat generated inside them when the planes sit under a hot sun all day—has been alleviated by the ingenuity of sub-depot mechanics attached to a Ferrying Command base located near here.

Pilots ferrying the big ships perspired uncomfortably during the work of testing the engines, instruments, etc. before takeoff—this lasting sometimes as much as an hour. The 100° F. temperatures caused by the sun even caused some crews to take off clad only in shorts. In the air, of course, the temperature went down rapidly, causing colds and further discomfort.

Mechanics at the Air Force field, after listening to complaints of the air crews found the solution in an old air conditioning unit of five tons capacity which had been used to cool the "dope" room in an old hangar. This was rebuilt, placed on a scrap metal chassis with ancient airplane wheels, and powered with a small gasoline engine.

An eight inch canvas hose, connected with a sheet metal box which contains three rows of coils to cool the air, provides a means of blowing cool air into the fuselage of any plane at low cost. The unit is hauled from ship to ship before the crew enters it, and thus has removed a common "gripe" of fliers.

Storage In Air Conditioned Chambers Prolongs Life of Parachutes

FORT WORTH, Texas—Constantly-controlled temperatures and humidity maintenance by specially-designed air conditioning systems are insuring that Army Air Force parachutes will last a third or more longer at various Gulf Coast flying fields.

Before scientific studies into parachute silk durability were made by the Army's material division at Wright Field, Ohio, parachutes lasted around five to six years. They were likely to be thrown carelessly on the hangar floor, left in the sun, or exposed to dampness from time to time. Even with good storage treatment, however, their life was short. The silk would disintegrate or become raveled even when not used.

Experiments since have shown that the shortness of 'chute life was due chiefly to dampness which caused a gradual rot of the silk fibres—even when dampness was not detectable in storage rooms. Undergoing a monthly inspection, it was found that parachutes kept in extremely dry storerooms were in much better condition than those exposed to high humidity.

Now that lylon chutes have been added to the silk variety, the Army Air Forces is taking two steps to protect them for longer life. First, no pilot will ever get his chute wet under any conditions without sending it for immediate drying and repacking. Second, all chutes possible are stored in air conditioned, dehumidified rooms.

At a typical field where 340 parachutes are kept in a single building, a 15-ton conditioning system composed of three package units takes care of this important job. Temperature is maintained 24 hours daily at exactly 76° by delicate thermostatic controls located directly at the parachute shelves. Combined with the unit is a series of silica gel dehumidifiers through which all cooled air is passed before entering the room. These in sequence are able to keep the percentage of relative humidity down to about 25% which is less than the prescribed 30% maximum.

The room is used for storage only, with a separate office and workroom for parachute packers. Consequently, the conditioning system takes in fresh air which is passed through the intake, filtered, and then goes through three silica gel units. Distribution is by means of small individual ducts which spread the cooled dry air evenly over the room.

The original volume of air is recirculated six hours a day, fresh air being brought in during the period when pilots and aircrew members come in for their chutes. A vestibule-type door prevents mixing of damp air with the dry chute room atmosphere in even rainy weather.

The workroom in which 40-foot varnished tables are used for opening up parachutes and repacking them carefully is likewise cooled and dehumidified, with a slightly more comfortable relative humidity.

International G-E Names Adv. Agency

NEW YORK CITY—International General Electric Co., Inc., Schnectady, N. Y., has appointed Williams & Saylor, Inc., here as its advertising agency. Several programs are planned for 1944, utilizing foreign magazines and in some cases dealer promotional material in the various Latin American countries.

J. E. Peters, of the publicity division of International General Electric, is directing the company's advertising. Ralph W. Williams, president of Williams & Saylor, is in general charge of the account, with Willard Y. Stocking, account executive.

STEEL COILS
FOR
REFRIGERANT
and BRINE
KRAMER TRENTON Co.
Heat Transfer Products
TRENTON, N. J.

CORDLEY
Electric
WATER COOLERS
ALL SIZES FOR
SHIPBOARD AND LAND USE
MEET GOVT. SPECS.
CORDLEY & HAYES, NEW YORK, N. Y.

"Peace On Earth . . ."

These words will not always be as empty as they may sound this Christmas! One day they will again assume their full significance. And with that day will come all those fruits of peace for which the world now yearns. Your life will be fuller then, more exciting, more comfortable. And just as Weatherhead has helped build products like the car and the refrigerator in the past, in tomorrow's world we will be building the many products, new and old, now denied us by the war.

Look Ahead with W

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND, OHIO
Manufacturers of vital parts for the automotive, aviation, refrigeration and other key industries.

Plants: Cleveland, Columbia City, Ind., Los Angeles
Canada—St. Thomas, Ontario

Methods For Better Service

Be Sure System Is Dry Before Converting to Methyl

By A. J. Mattes, Service Manager, Universal Cooler Corp.

While so much has been written on the subject of moisture in refrigerating systems that to the average refrigeration service engineer it seems like an over-emphasized subject, moisture nevertheless is still responsible for a large percentage of refrigeration system failures.

The present problems in conversion of "Freon" equipment to methyl chloride and the fact that a large number of these conversions must be performed by novice service men seem to justify additional consideration of moisture difficulties and their correction at this time.

Manufacturers Take Every Precaution

Every manufacturer of refrigeration compressors, coils, accessories and condensing units takes every precaution known to the industry to insure their products being as nearly moisture free as is humanly possible. To insure the lowest possible moisture content requires a continual guard against a breakdown in the moisture control system and a continual laboratory checkup on moisture content and moisture control equipment. Notwithstanding the extreme precautions taken in the production of refrigeration equipment, moisture difficulty can be expected unless similar care is exercised at the time of installation and during each service operation.

In addition to moisture being troublesome from an erratic refrigeration stand-point, the chemical reaction which takes place between water and most refrigerants, particularly methyl chloride and sulphur dioxide, forms an acid which attacks the metal parts of the system and the lubricating qualities of the compressor oil. If moisture is not removed promptly from systems of this type, it will usually result in corroding or plating of the valves and may eventually cause the compressor to seize. While some acid is formed in wet "Freon-12" systems the reaction is much milder and takes place only in the presence of heat.

More Serious Problem

Because moisture presents a more serious problem in a methyl chloride system, it is very important that every possible precaution be taken to make sure a system is dry before converting from "Freon" to methyl chloride.

It is generally recognized as good practice to install a large drier in the liquid line of each new installation to insure the removal of any moisture that may have been admitted during the installation process. While a drier so installed is an added protection against moisture difficulty, it should be remembered that a drier can absorb only a limited amount of moisture and that so long as the drier remains in the system the moisture hasn't actually been removed. Any moisture in excess of the drier's capacity will remain to circulate in the system and continue to be the cause of erratic refrigeration.

Moisture difficulty usually makes its first appearance at the expansion valve or at the point of refrigerant expansion in systems equipped with a capillary tube as a refrigerant control, and will cause equipment operated by a low pressure control to short cycle continuously without refrigerating. Systems equipped with temperature controls will operate continuously without refrigerating.

Clogs Expansion Valve

The expansion valve orifice or capillary tube outlet through which the refrigerant passes before expanding is very small and in a wet system will quickly become clogged with ice as the temperature drops and freezes out the moisture. After this opening is blocked, the flow of refrigerant to the evaporator is stopped and refrigeration interrupted until the system warms up to the melting point of ice. As soon as the refrigerant again flows through the orifice, temperatures drop rapidly and almost instantaneously the water will again freeze in the orifice. This will continue until adequate steps are taken to remove the moisture.

Because of the damaging effect of acid formed by the reaction of water and refrigerant as well as the erratic refrigeration it causes, it is important that steps be taken at the first indication for its immediate removal. The method to be employed depends on the quantity of moisture present in the system.

A system containing only a minute quantity of moisture can usually be satisfactorily dried through the installation of a suitable drier in the liquid line and operation of the system for approximately two hours maintaining evaporator temperatures about 32° F.

Repeat Procedure

If this procedure does not remove all traces of moisture the above procedure should be repeated or the drier replaced with a larger drier and the compressor oil replaced with new moisture free oil. It cannot be assumed that a drier will always completely remove moisture in a short period of time. In some cases the moisture will be present in the compressor oil and this moisture is difficult to remove quickly unless the oil is replaced.

Where excessive moisture is encountered it is advisable, if possible, to bake all parts of the system at high temperature while under vacuum. This is the most positive way to insure the removal of moisture; however, in many cases due to the lack of necessary equipment or the type or nature of the installation, this is impossible.

How to Remove Moisture

In these cases the following method is recommended.

1. Stop the condensing unit and permit evaporator temperature to rise well above 32° F.
2. Purge the refrigerant charge from the system.
3. Remove the expansion valve or capillary tube and install a suitable fitting that will permit the direct connection of the liquid line to the evaporator.
4. Remove the compressor assembly and inspect for moisture damage. If compressor has been seriously affected, repair or replace the complete assembly. If compressor is not seriously affected replace the compressor oil replacing the exact amount removed.
5. Remove any drier that may be installed in the liquid line.
6. Blow out the lines and evaporator coil for at least two minutes by connecting a drum of anhydrous carbon dioxide at a pressure of 225 lbs. to the liquid line. The time should be lengthened where excessive restrictions are encountered.
7. Blow out the condenser and receiver with anhydrous carbon dioxide, as indicated in Sept. 6.
8. Reinstall the compressor.
9. Flush the expansion valve with anhydrous methyl alcohol or replace with a new valve. On capillary tube systems blow out capillary with anhydrous carbon dioxide.
10. Install a new large capacity drier.
11. Recharge the system with the correct amount of clean dry refrigerant.
12. Operate the system intermittently for approximately one hour maintaining evaporator temperature about 32° F., then operate the system normally.
13. If no further evidence of moisture develops the drier should be removed from the system after approximately 10 days' operation.

WPB Explains Rules On Inventory for Separate Units

WASHINGTON, D. C.—Separate operating units of a single company are subject to WPB inventory restrictions individually, if each keeps its own inventory separately, WPB has ruled.

This ruling is contained in Interpretation No. 8 to Priorities Regulation No. 1, which points out that if one unit of a firm has exceeded its inventory limit, units that have not so exceeded their limit are not prevented from acquiring additional inventory within their own individual limits.

If a WPB order or regulation provides exemption for small purchases, an operating unit that purchases separately need not consider purchases of other units in determining whether or not it comes within the exemption.

However, in some cases, one operating unit may be treated separately from the others of a company for inventory purposes, but not for small order exemptions. For example, if a distributor purchases centrally for direct shipment to several outlets that keep separate inventories, the outlets are treated separately for purposes of inventory restrictions, but the central purchasing agency must consider all of its purchases in determining whether or not a purchase comes within the small order exemption.

The interpretation applies only in cases where no contrary rule is expressly provided in a WPB order or regulation. It also specifically does apply in any case where regular business practice of a firm is changed to come within the provisions of the interpretation.

Goldberg's Christmas Party Set for Dec. 16

CHICAGO—Stage and radio acts will entertain the 600 people expected to attend the seventh annual party to be presented for the refrigeration industry at the Drake hotel here Dec. 16 by Herman Goldberg, manufacturers' representative. Party is scheduled for 9 p.m. in the Grand Ballroom.

Don Fernando and his CBS orchestra have been booked by Mr. Goldberg, as has the chorus featured recently at Hotel Sherman's popular Panther Room. Master of ceremonies will be Sid Blake, who, according to Mr. Goldberg, has just returned from a 22-month circuit entertaining USO centers and encampments in such places as Alaska, Iceland, and Greenland.

Also included in the program are the Five Taylor Kids from the Roxy Theater of New York City, Ada Lyn and Claude & Andre, Chicago comedy teams.

Lt. Commander Eddie Peabody, the banjo king, may also appear, Mr. Goldberg said.

Beer, singing bartenders and waiters, and drawings with war bonds and stamps as prizes, are additional features.

Kerotest Lets Contracts For Plant Addition

PITTSBURGH—The Kerotest Mfg. Co., manufacturers of valves and fittings, has contracted for a one-story brick addition to its plant at 26th St. and Penn Ave., the company reports.

Plans drawn provide for a new unit, 100 by 146 feet in size, with three bays and two crane runways.

THERMAL COMPANY, INC.

2448 UNIVERSITY AVENUE

ST. PAUL 4, MINNESOTA

THE NORTHWEST'S LEADING

WHOLESALER OF REFRIGERATION PRODUCTS

Welcomes contact with

PROGRESSIVE MANUFACTURERS

Who are planning new or better

POST-WAR REFRIGERATION PRODUCTS

To such manufacturers, our organization offers an opportunity to present their products to 2500 alert and qualified accounts in the states of Minnesota, Wisconsin, Iowa, North Dakota, South Dakota, Montana and parts of Michigan.

TO THOSE FRIENDS WE CALL OUR CUSTOMERS

We pledge ourselves to continue our policy of providing you with products of outstanding merit, soundly engineered and applied. We further pledge ourselves to keep abreast of the times and to provide you with products embodying all of the new developments that conservative progressiveness will permit. Our ability to supply you with your every-day needs reached a low point during last June and July. You have noticed a steady improvement during the ensuing months, and we anticipate a continuance of this trend. Some way—somehow, you managed to get over the hump. I know you join me in openly acknowledging the debt of gratitude we owe to those manufacturers who never took their eye off the ball and used every human effort to make their products available to us.

OUR OWN POST-WAR PLANS

Contemplate a larger organization, an increase in the type of products we offer, an improvement in those we are now offering, an expanding business for our customers, and making new friends and being loyal to old friends.

Yours for speeding the post-war period by an all-out effort in the present war period.

Sincerely,

Huntington W. Small, President

Thermal Company, Inc.

Your refrigeration parts and supply house in Central New York and Northern Pennsylvania.

TED GLOU

CENTRAL SERVICE SUPPLY CO.

409 E. Jefferson St., Syracuse, N. Y. Phone 5-4000

209 Jefferson Ave., Scranton Pa. Phone 3-4000

New CMP Regulation 9A Simplifies Material Purchases by Repair Shops

(Concluded from Page 1)

and 5A, should use their customers' preference ratings to buy other materials and products that require such ratings.

CMP Regulation 9A can be used to buy materials for civilian and commercial jobs, as well as for repairs to major and small appliances and radios.

The new CMP Regulation No. 9A permits persons operating farm machinery repair shops, blacksmith shops, radio repair shops, upholstery repair shops, and electricians, plumbers, and others engaged in any type of repair work, to buy up to 20 tons of carbon and alloy steel, a total of 500 pounds of copper and copper base alloy brass mill and foundry products, and 200 pounds of aluminum in specified forms and shapes in any calendar quarter.

Special provision is made in the regulation to permit refrigeration repairmen, electricians, domestic appliance repairmen, electrical contractors, and radio repairmen to buy $150 worth of copper wire or one-eighth of what they used during 1941 (figured as accurately as possible by dollar volume) whichever is more.

HOW TO ARTIFY ORDERS

To buy materials and parts under CMP Regulation No. 9A, a repairman must put a certification in substantially the following form on his orders:

CMP Allotment Symbol V-3: Preference Rating AA-3. "The undersigned purchaser certifies, subject to the penalties of Section 35 (A) of the United States Criminal Code, to the seller and to the War Production Board, that, to the best of his knowledge and belief, the undersigned is authorized under applicable War Production Board regulations or orders to place this delivery order, to receive the items ordered for the purpose for which ordered, and to use any preference rating or allotment number or symbol which the undersigned has placed on this order."

Repairmen who do work for persons who have the right to use a AA-2X or higher preference rating to buy non-controlled materials and parts for their own maintenance and repair, may use their customers' ratings to buy what they need for repair or maintenance work or to replace inventory used for such purposes.

The regulation specifically prohibits repairmen from fabricating repair parts that they intend to sell to others, rather than use themselves, with the materials that they obtain under the procedure CMP 9A sets up.

Deliveries of materials may not be accepted if the inventory of the repairman accepting such deliveries would become in excess of a 60-day supply, except in the case of copper wire, with respect to which the inventory limitation is 15 days.

Materials obtained under CMP 9A may not be used in violation of other regulations and orders of WPB, and that in any case where special application is required to obtain certain materials such applications must be filed in order to obtain them.

OTHER MOVES PLANNED

The new regulation is one of several steps planned by OCR through its Service Trades Division, under the direction of Donald R. Longman, to aid repair agencies in their efforts to render better service to civilian and commercial customers.

Changes in CMP Regulation No. 9 include the following:

1. Elimination of provisions permitting repairmen to obtain copper wire, since they now operate under CMP 9A.

2. Reduction of the amount of copper wire which retailers may obtain to $50 worth per quarter or one-sixteenth of the amount sold during 1941.

3. Provision that retailers may fill farmers' orders for copper wire upon receipt of a copper wire allotment certificate.

Following is the complete text of the new regulation:

Part 3175—Regulations Applicable to the Controlled Materials Plan

[CMP Reg. 9A]

PARTS AND MATERIALS FOR REPAIRMEN

§ 3175.9a **CMP Regulation 9A**—(a) **What repairmen can buy materials and parts under this regulation.** Anyone in the business of making repairs may buy materials and parts under this regulation. This includes such persons as farm machinery repair shops, blacksmiths shops, electricians, radio repair shops, plumbers, refrigeration repair shops, boiler repair shops, motor rewinders, electrical contractors, automotive repair shops, upholstery repair shops, bicycle repair shops, and carpenters. It also includes repair shops which are owned by the persons for whom the repair work is done if that person can segregate the purchases of his repair shop from his other purchases.

(b) **How much materials a repairman can buy.** Each calendar quarter a repairman may buy, under this regulation, up to 20 tons of carbon and alloy steel, a total of 500 pounds of copper and copper base alloy brass mill and foundry products, and 200 pounds of aluminum, in the forms listed in Schedule I. In addition, refrigeration repairmen, domestic appliance repairmen, electricians, electrical contractors, and radio repairmen may buy $150 worth of copper wire, or one-eighth of what they used in making repairs in 1941 (figured as accurately as possible by dollar value), whichever is more. A repairman may buy as much other material and repair parts as he needs for his maintenance and repair work.

(c) **How to buy materials under this regulation.** (1) When buying materials and parts under this regulation a repairman must put on his order a certification in substantially the following form:

CMP Allotment Symbol V-3; Preference Rating AA-3.

The undersigned purchaser certifies, subject to the penalties of section 35 (A) of the United States Criminal Code, to the seller and to the War Production Board, that, to the best of his knowledge and belief, the undersigned is authorized under applicable War Production Board regulations or orders to place this delivery order, to receive the items ordered for the purpose for which ordered, and to use any preference rating or allotment number or symbol which the undersigned has placed on this order.

He must sign the certification himself, or as described in Priorities Regulation No. 7. An order for controlled materials bearing this certification is an authorized controlled material order under all CMP regulations.

(2) If a repairman does repair work for persons who have the right to use a preference rating higher than AA-3 to buy non-controlled materials and parts for their own maintenance, and repair, the repairman may use that rating to buy what he needs to do their work or to replace in inventory what he has already used for that purpose.

(d) **How a repairman can get more controlled materials.** (1) The War Production Board may authorize repairmen who do work primarily of an industrial nature to buy up 2,000 pounds of copper wire and a total of 2,000 pounds of copper and copper base alloy brass mill and foundry products, and to use the preference rating AA-2. To get this authority, a repairman must apply to the War Production Board, Reference CMP Regulation No. 9A, Washington (25), D. C., by letter giving information showing what kind of work he is doing, and what kind of customers he has.

(2) If a repairman needs to buy more controlled materials a quarter than he can get under this regulation including what an industrial repairman can get under paragraph (1), he should fill out and send Form CMP-4B to the War Production Board, Washington (25), D. C. The War Production Board may allot him controlled materials and assign him a preference rating. If he gets an allotment, he may not buy any controlled materials or non-controlled materials or parts under this regulation.

(e) **What kind of work a repairman may do with materials or parts bought under this regulation.** A repairman may use what he buys under this regulation only to do maintenance and repair work. He may not use what he buys to make products, such as repair parts, which he does not expect to use himself in making repairs.

(f) **Restrictions on inventory.** A repairman may not accept delivery of any item of parts or materials bought under this regulation if his inventory of that item of parts or materials is or would by accepting delivery become larger than he needs to continue his repair and maintenance service for a 60-day period, according to his current method of operation. A repairman may not accept delivery of any item of copper wire if his inventory of that item is or would by accepting delivery become more than he needs for a 15-day period. However, if the supply of any item which he has on hand is less than the permitted amount, he may accept delivery of the smallest commercial amount of that item which his distributor normally sells, even if that will increase his supply beyond the amount specified.

(g) **Effect of other orders and regulations.** (1) Repairmen buying and using parts and materials under this regulation are subject to all applicable provisions of the other orders and regulations of the War Production Board as amended from time to time. Attention is specifically called to the provisions of Conservation Order M-9-c and M-9-c-4 which limit the use of copper. Order M-1-i which limits the use of aluminum. Order M-126 which limits the use of steel, and Order L-41 which forbids construction (including wiring and piping) except under certain conditions. Information concerning these orders can be secured from the nearest War Production Board field office.

(2) No item appearing on List A or B of Priorities Regulation No. 3, (such as automotive repair parts) may be bought under this regulation.

(3) Certain orders of the War Production Board require special applications for some materials and parts. An example of this type of order is M-328, Textiles. A repairman will not be able to buy these materials and parts under this regulation. Generally his supplier can tell him if a special application is needed.

(h) **Communications.** Any communications or appeals under this regulation should be made by writing a letter to the War Production Board. Reference CMP Regulation 9A, Washington (25), D. C.

Issued this 25th day of November, 1943.

WAR PRODUCTION BOARD,
By J. Joseph Whalen,
Recording Secretary.

SCHEDULE I*

STEEL

Carbon steel (including wrought iron):
Bars, cold finished.
Bars, hot rolled.
Ingots, billets, blooms, slabs, die blocks, tube rounds, skelp, and sheet and tin bar.
Pipe, including threaded couplings of the types normally supplied on threaded pipe by pipe mills.
Plates.
Rails and track accessories.
Sheets and strip.
Steel castings.
Structural shapes and piling.
Tin plate, terne plate, and tin mill black plate.
Tubing.
Wheels, tires, and axles.
Wire rods, and wire products.
Alloy steel (including stainless):
Bars, cold finished.
Bars, hot rolled.
Ingots, billets, blooms, slabs, die blocks, tube rounds, sheet bar.
Pipe including threaded couplings of the types normally supplied on threaded pipe by pipe mills.
Plates.
Track accessories.
Sheets and strip.
Structural shapes.
Steel castings.
Tubing.
Wheels, tires, and axles.
Wire rods, wire, and wire products.

COPPER AND COPPER-BASE ALLOY PRODUCTS

I. **Brass mill products** (for the purpose of this regulation):
Aloly sheet and strip:
Alloy plate, sheet, and strip (including strip equivalent of ammunition cups and discs).
Alloy rods, bars and wire including extruded shapes:
Alloy rods, bars and wire (including extruded shapes and ammunition slugs).
Alloy seamless tubing and pipe:
Alloy seamless tubing and pipe.
Brass mill copper products:
Plate, sheets, and strip.
Rods, bars, and wire including extruded shapes (not including wire bars and ingot bars, or rod and wire for electrical conduction).
Tube and pipe.
II. **Wire mill copper products:**
Wire and cable (bare, insulated, armored, and copped-clad steel) for electrical conduction.
III. **Foundry copper and copper-base alloy products:**
Castings (before machining).
Powder (copper or copper-base alloy).

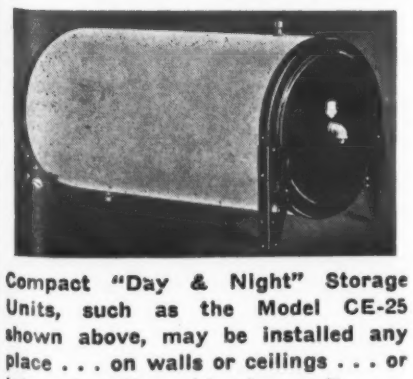
ALUMINUM

Rod, bar, wire, and cable:
Rod and bar.
Wire (wire covers maximum diameter under ⅜" in rounds, ovals, squares, hexagonals, octagonals, and rectangles).
Cable (electrical transmission only).
Rivets:
Rivets.
Forgings, pressings and impact extrusions:
Forgings and pressings (before machining).
Impact extrusions.
Castings:
Cylinder head castings for air-cooled engines.
Heat treated sand castings, except cylinder heads.
Non-heat treated sand castings.
Heat treated permanent mold castings.
Non-heat treated permanent mold castings.
Cold-chamber die castings.
Gooseneck die castings.
Other castings (including rotor, centrifugal, plaster, etc.)
Shapes, rolled or extruded:
Rolled structural shapes (angle, channels, zees, tees, etc.).
Extruded shapes.
Sheet, strip, plate and foil:
Sheet, strip and plate.
Foil (0.005" and thinner).
Tubing and tube blooms:
Tubing.
Tube blooms (tube redraw stock).
Ingot and powder:
Powder.
High-grade ingot.
Low-grade ingot.

*This schedule is identical in substance with Schedule I of CMP Regulation 1.

"DAY & NIGHT"

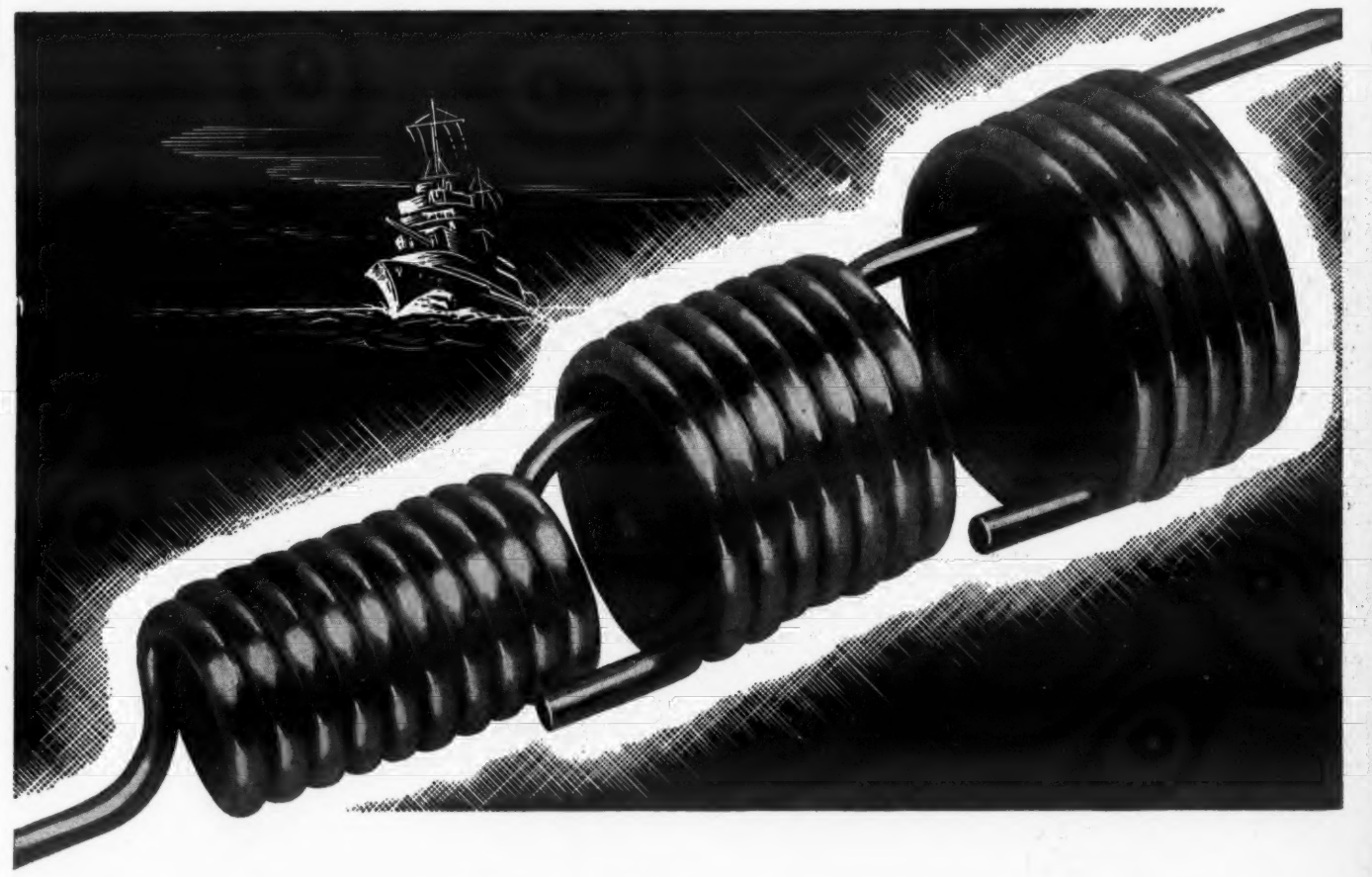
STORAGE TYPE TANKS SAVE SPACE



Compact "Day & Night" Storage Units, such as the Model CE-25 shown above, may be installed any place . . . on walls or ceilings . . . or integral with condensing unit . . . wherever cold water is required for drinking, jacket cooling, photographic processes, cooling welding tips, etc. A modern Scuttlebutt for shipboard use. Supplied on storage capacities from 6 to 100 gallons.

Write For Latest Data

DAY & NIGHT COOLER DIVISION
DAY & NIGHT MFG. CO.
MONROVIA • CALIFORNIA
FACTORY REPRESENTATIVES
NEW YORK CHICAGO
A.C.Homeyer, 682 Bdwy. • Marc Shantz, 565 Wash. Blvd.
ST. LOUIS DECATUR, GA.
B.H.Spangler, 3331 Market St. • J.E.Parker, 228 2nd St.



Anything like this IN YOUR PLANT?

This nested assembly of copper tube coils is fabricated to be used in an oil cooler for the Navy. It is made of tube ⅜" outside diameter with wall thickness of .035". Note the short radius.

If this piece reminds you of a similar problem of yours involving tube or tubular parts, call Wolverine Tube Division for consultation and quotation. We have hundreds of standard tools already on hand for making parts and assemblies similar to the part shown here, along with a wealth of experience in handling seamless tube.

BUY WAR BONDS

Or if you prefer to make the part yourself, call on Wolverine anyway as a source for tube that will be uniformly high in quality and possess the right properties for fabricating. Also consult our engineers regarding types of tools, methods, and techniques. Their talents and services are yours for no cost.

Wolverine Tube Division of Calumet and Hecla Consolidated Copper Co., 1411 Central Ave., Detroit 9, Mich.

In Canada: Unifin Tube Company
London, Ontario

WOLVERINE
TUBE DIVISION
CALUMET & HECLA CONSOLIDATED COPPER COMPANY

Complete Text of L-38 With Latest Revisions

EDITOR'S NOTE: Limitation Order L-38 covering commercial and industrial refrigerating and air conditioning machinery has just been completely revised by the War Production Board, relaxing some of the restrictions. The NEWS is publishing on these pages the complete text of the amended order, and on Page 1 will be found a story outlining the changes just made.

Title 32—National Defense
Chapter IX—War Production Board
Subchapter B—Executive Vice Chairman
Part 1226—General Industrial Equipment (1)
Limitation Order L-38, as amended November, 1943
Industrial and Commercial Refrigerating and Air Conditioning Machinery and Equipment

Section 1226.6 (Limitation Order L-38) is hereby amended to read as follows:

The fulfillment of requirements for the defense of the United States has created a shortage in the supply of steel, copper, and other materials for defense, for private account and for export; and the following order is deemed necessary and appropriate in the public interest and to promote the national defense:

Section 1226.6 (Limitation Order L-38)

(a) **Purposes and Scope.** This order tells how to get new refrigeration or air conditioning "systems" and "parts." With certain exceptions, these may be delivered only for essential uses as explained in Lists B and C, and pursuant to an "approved order" rated AA-5 or higher. In some cases a purchaser is allowed to apply his MRO or other ratings without any special authorization, but in other cases he must apply to the War Production Board for approval. The order also states how much a producer may manufacture during any calendar quarter. It will be noted that certain types of equipment, such as domestic refrigerators, are not included in this order, since they are covered by other orders of the War Production Board.

DEFINITIONS

(b) **Definitions.** For the purpose of this order:

(1) "System" means any refrigerating or air conditioning system, consisting of an assembly or combination of machinery, equipment, or other apparatus designed primarily to lower temperature or remove water vapor, directly or indirectly, by mechanical, chemical or physical means. The term does not include a domestic mechanical refrigerator, a domestic ice refrigerator, or heat exchanger equipment, as defined respectively in paragraphs (b) (5), (b) (6), and (b) (9) or this order; or coils or low sides which are incorporated into "food processing machinery" (as defined in Order L-292).

(1) Formerly Part 1071, Section 1071.1.

(2) "Parts" includes any assemblies of parts, equipment, insulated enclosures and cold storage doors (except insulation materials used therein), accessories, implements or devices designed or intended for incorporation or use in a system or for installation therewith in causing it to perform its functions, except the following materials:

Liquid or gaseous refrigerants; oils or other lubricants; cleaning fluids or other solvents; anti-freeze fluids; drying agents; paints, enamels, varnishes, thinners, and seam fillers; wax polishes and rust preventives; soldering and brazing fluxes and welding rods; non-metallic filters; belts and belting; gaskets; packing; insulation materials; small hardware, such as nuts, bolts, washers, screws, and cotter pins.

(3) "Producer" means any person to the extent that he is engaged in the manufacture, fabrication, or assembly of new systems or parts, or industrial type extended surface heating equipment, or industrial type humidifying equipment. The term does not include any sales or distribution outlet of a producer.

(4) "Deliver" means: (i) to transfer physical possession, title, or ownership; or (ii) to install for use (but not including a temporary installation solely for the purpose of testing the system or part, or the moving of an installed system from one point on the owner's property to another); or (iii) to place in the hands of any carrier or otherwise in transit for transfer of possession to another person; (regardless of whether such transfer, installation, or shipment is for the purpose of sale, trade, loan, lease, consignment, or other type of transaction).

(5) "Domestic mechanical refrigerator" means any refrigerator for household use which operates either by compression or absorption and which has a net capacity of 16 cubic feet or less (National Electric Manufacturing Association rating), but does not include any low temperature mechanical refrigerator designed for the storage of frozen foods or for the quick freezing of food where the low temperature compartment customarily operates at a temperature of not higher than 15 degrees above zero Fahrenheit and contains 75% or more of the total refrigerating space in the refrigerator.

(6) "Domestic ice refrigerator" means any non-mechanical ice chest or ice box for home use.

(7) "Industrial type extended surface heating equipment" means any apparatus employing a heat transfer element and designed primarily to increase the temperature of gaseous matter, in connection with the operation of any refrigerating or air conditioning system.

(8) "Industrial type humidifying equipment" means any apparatus designed primarily to add water vapor to gaseous matter, in connection with the operation of any industrial or commercial refrigerating or air conditioning system, or for any purpose other than the health or comfort of persons.

(9) "Heat exchanger equipment" means an assembly, bundle or nest of bars or finned tubes installed in a shell or pressure vessel, and designed for the transfer or exchange of heat between two or more fluids (liquids, gases, or vapors), without the use, as a refrigerant, of (i) ammonia, carbon dioxide, methyl chloride, sulphur dioxide, or chlorinated hydrocarbon refrigerants (trichloromonofluoromethane, dichlorodifluoromethane, dichloromonofluoromethane, trichlorotrifluoroethane, and dichlorotetrafluoroethane), or (ii) brine or water which has been cooled by the use of ice or any of such refrigerants.

(10) "For direct use by the Army, Navy, Maritime Commission, or War Shipping Administration" means for direct use by the regular personnel or regular employes of such an agency only (or "for military exchanges or service departments" under Priorities Regulation 17), but regardless of whether delivery is made by the producer or dealer directly to such an agency, or through or to an intermediate dealer or contractor. The term does not means for use in any privately operated plant or shipyard financed by, or controlled by, any of such agencies, or operated on a cost-plus-fixed-fee basis.

DELIVERIES: APPROVED ORDERS

(c) **Restrictions on Deliveries.**

(1) **No deliveries except on approved orders.** No person shall deliver, and no person shall accept delivery of, any new system or new parts except pursuant to an approved order, as defined in paragraph (d). Exceptions to this general rule are stated in paragraph (e). Additional restrictions on delivery are stated below in subparagraphs (c)(2), (3), (4), and (5).

(2) **List B items.** No person shall knowingly deliver, and no person shall accept delivery of, any new item on List B, (i) unless the item is for direct use by the ultimate consumer and for the specified use, if any, as shown on that list, or (ii) unless delivery is otherwise permitted pursuant to an approved order of a kind specified in subparagraphs (d)(1) or (d)(4).

(3) **Items for a use permitted by List C.** No person shall knowingly deliver, and no person shall accept delivery of, any new system or parts not shown on Lists A or B, unless the system or parts are to be used by the ultimate consumer for an essential purpose specified on List C. This subparagraph (c)(3) does not affect the delivery of parts for the maintenance or repair of any existing system.

(4) **Parts for items performing List A functions.** No person shall knowingly delivery, and no person shall accept delivery of, any new parts for assembly into any item to perform the same functions as an item on List A. For example, a new condensing unit, lowside, refrigerant connections, or valves, etc., may not be acquired (together or separately) for assembly into or with an insulated enclosure to perform the functions of a "farm freezer" or "frozen food cabinet."

(5) **Heating or humidifying equipment.** No person shall deliver, and no person shall accept delivery of, any new industrial type extended surface heating equipment or industrial type humidifying equipment except pursuant to an approved order.

(d) **Approved orders.** The following types of purchase orders for delivery of any new system or parts, or industrial type extended surface heating equipment or industrial type humidifying equipment, when rated AA-5 or higher, are "approved orders:"

(1) Orders for direct use by the Army, Navy, Maritime Commission, or War Shipping Administration.

(2) Orders by a person and for a direct use, if any, as shown on List B. These orders, when not otherwise rated, are hereby assigned a preference rating of AA-5 within the limited usese specified in List B. The rating may be applied and extended in accordance with Priorities Regulation No. 3.

(3) Orders placed in accordance with any CMP Regulation (including CMP Regulation 1), any preference rating order of the War Production Board (including F-126), or Priorities Regulation 9.

(4) Other orders specifically rated and authorized as follows by the War Production Board on application of the proposed purchaser. The appropirate application form is indicated below:

Resale. Forms WPB-541 (PD-1A) or WPB-547 (PD-1X.)—These forms may be used by dealers or others who are not producers and who are purchasing for inventory or resale. The correct form depends on the nature of the purchase and of the buyer's business.

Export. Form WPB-541 (PD-1A.)—This form may be used where the applicant desires to export or acquire for export. Delivery of items by the exporter is subject to the restrictions of List C (see paragraph (c) (3)).

Large installation by ultimate consumer. Form WPB-617. This form is to be used if installation of a system is involved and the cost of the construction (exclusive of the cost of the prime mover, compressor (condensing unit), condenser, receiver, evaporator surface (low-side), controls, indirect cooling units, and cooling tower) is more than $5,000. The applicant should apply for the whole project, including the system, on this form.

All other applications by ultimate consumer. Forms WPB-2448 or 2449. These forms are to be used in all cases other than those above specified. Form WPB-2449 is to be used when the system or parts are required for use in any cold storage warehouse, industrial or commercial ice plant, frozen food locker plant, food processing plant (except a dairy or ice cream plant requiring equipment having a capacity of 5 H.P. or 5 tons (A.S.R.E. specifications) or less), industrial processing of products other than food, refrigerated railroad car, truck or ship, or any air conditioning installation of any size. For all other uses, Form WPB-2448 is the correct form. If authorization is granted on either of these applications, it will be accompanied by any necessary permission to "begin construction" under Conservation Order L-41, and no separate application for that purpose need be made under that order.

EXEMPTIONS

(e) **Exemptions.**. (1) **List A Items.** An approved order under paragraph (c) (1) is not necessary for the delivery of any complete item on List A which is fabricated and in stock, or which may be produced in accordance with paragraph (g).

(2) **Loans not exceeding thirty days.** An approved order is not necessary for the lease or loan of a new system or parts for a period not to exceed thirty days pending the performance of maintenance and repair service to a used system or parts, nor for the redelivery of the leased or loaned system to the lessor.

(3) **Bankruptcy, etc.** An approved order is not necessary for the transfer (to a trustee or receiver for the benefit of creditors) of title to, and/or delivery of, any new system or parts, through voluntary act or by operation of law in bankruptcy, receivership or assignment.

(4) **"Upstream" deliveries.** An approved order is not necessary for the return of unused systems or parts to the person from whom they were purchased.

UTILIZATION OF REPLACED PARTS

(f) **Required Utilization of Replaced Parts.** (1) When any part is delivered for maintenance or repair to any person acquiring the same for use, he must dispose of the replaced used part, if it is made of metal, through regular scrap channels, within thirty (30) days after installation of the new part, unless he returns the same to his supplier (for such reconditioning or disposition as the latter may make). All replaced parts thus obtained by a dealer or producer during any calendar quarter must be either repaired and placed in his inventory, or returned to his supplier of new parts, or disposed of through regular scrap channels, during or within thirty (30) days after the end of that quarter. No block tin pipe shall be replaced unless an equal quantity thereof is returned to the supplier.

(2) The provisions of the preceding subparagraph (f)(1) shall not apply:

(i) Where parts are delivered for installation in any system located outside of the continental United States at the time of such delivery; or

(ii) Where the system requiring repair is being used directly by the Army, Navy, Maritime Commission, or War Shipping Administration; or

(iii) Where the system requiring repair is owned by any Federal, State, or local governmental agency, bureau, department, or political subdivision which is prohibited by law from disposing of such replaced parts in the manner explained in the preceding subparagraph (f)(1).

RESTRICTIONS ON PRODUCTION

(g) **List A Items.** No producer shall manufacture or assemble any item on List A, unless (1) 75% (by weight) of the total material to be incorporated in the item was fabricated and in the producer's inventory prior to April 6, 1943, and (2) the material cannot be used in the assembly of any system or parts not shown on List A. The manufacture and assembly of these List A items is subject also to all applicable provisions of Order L-126 and all other applicable orders of the War Production Board.

(h) **Other Items.** During the calendar quarter starting Jan. 1, 1944, and during each later calendar quarter, no producer shall manufacture or assemble more of any "class" of new systems and parts (other than parts for maintenance and repair) as shown on List D, than his quota for that class. This quota for any class is in terms of aggregate dollar volume (producer's sales price at the factory, exclusive of installation charges), and is the greater of the following two quantities:

(1) His dollar volume of all unfilled orders on hand rated AA-5 or higher for that class of new systems and parts, or

(2 One-sixteenth of the aggregate dollar volume of that class of new systems and parts (other than items on List A) manufactured by him during the calendar year 1940, in addition to his current production required to fill all orders for direct use by the Army, Navy, Maritime Commission, or War Shipping Administration.

Producers may manufacture and assemble parts for maintenance and repair without reference to these restrictions, and should not include them in the above quotas.

MISCELLANEOUS PROVISIONS

(i) **Miscellaneous provisions.** (1) **Applicability of regulations.** This order and all transactions affected by it are subject to all applicable regulations of the War Production Board, as amended from time to time, unless this order states otherwise.

(2) **Violations.** Any person who wilfully violates any provision of this order, or who, in connection with this order, wilfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of a crime, and upon conviction may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from processing or using, materials under priority control, and may be deprived of priorities assistance.

(3) **Appeals.** Any appeal from the provisions of this order (or of Conservation Orders M-9-c or M-126 applicable to any systems, parts, or other equipment subject to the terms of this order) shall be made by filing a letter in triplicate, referring to the particular provision appealed from and stating fully the grounds of the appeal. This letter must be filed with the field office of the War Production Board for the district in which is located the plant or branch of the appellant to which the appeal relates.

(4) **Communications.** All reports to be filed and other communications concerning this order (except appeals), unless otherwise directed, should be addressed to:

War Production Board
General Industrial Equipment Division
Washington 25, D. C.
Ref: L-38

LIST A

Delivery of the following items may be made without an "approved order" (see

(Concluded on Page 21, Column 1)

HEALTHFUL LIVING THROUGH FROZEN FOODS

Ask Your Farmer Friends!

A "locker plant" for food freezing and frozen storage RIGHT ON THE FARM is the post-war dream of every modern farm family.

Tomorrow's farmer will KNOW about the advanced features of the BEN-HUR FARM LOCKER PLANT. Today's advertising will guarantee this ready market for you — for your volume selling at V-Day. Get your name on the list for "ground-floor" data and sales opportunities on the new BEN-HUR LOCKER PLANT.

TODAY-OUR FIGHTING MEN NEED *MORE WAR BONDS*

Remember

BEN-HUR

ARMY-NAVY "E" Awarded Ben-Hur for outstanding achievement in War Production.

FARM LOCKER PLANTS

BEN-HUR MFG. CO.

634 East Keefe Avenue, Milwaukee 12, Wisconsin

Yes, you can get

ANSUL SULPHUR DIOXIDE METHYL CHLORIDE

Experienced Research
Exacting Manufacture
Certified Quality

RETURN EMPTY CYLINDERS PROMPTLY AND SAVE STEEL FOR *Victory* AC-58

ANSUL CHEMICAL COMPANY • MARINETTE, WISCONSIN

THERE'S AN EFFICIENT ANSUL JOBBER NEAR YOU

FIELD ENGINEERS

We have several excellent positions open for seasoned men with at least 5 years experience in air conditioning and refrigeration field work. Applicants must have good background in selling, estimating, making engineering layouts, contracting and installation work. Should be able to develop dealer and contractor outlets into substantial accounts.

Requirements include sales personality, good character, physical fitness, and good performance record. Men selected must be free to travel in any territory.

Apply in writing only, giving complete business history, education, draft status, and availability under WMC requirements to

Sales Department
AIRTEMP DIVISION, CHRYSLER CORPORATION,
Dayton, Ohio

Complete Text of Order L-38 as Amended by War Production Board

(Concluded from Page 20, Column 5)

paragraph (e)(1); however, their production is prohibited for any purpose, except in accordance with paragraph (g).

1. Beer pre-coolers.
2. Beverage dispensers.
3. Bottled beverage coolers, mechanical.
4. Bottled beverage coolers, non-mechanical.
5. Counter and back bar refrigerators.
6. Refrigerated display cases, single duty.
7. Refrigerated display cases, double duty.
8. Refrigerated display cases, florist.
9. Refrigerated display cases, frosted food.
10. Refrigerated display cases, full vision.
11. Refrigerated display cases, vegetable.
12. Refrigerated display cases, all other types.
13. Dough retarding refrigerators.
14. Draft beer equipment.
15. Drinking water coolers, non-mechanical.
16. Drinking water coolers, mechanical, bottle type.
17. Drinking water coolers, mechanical, pressure type, capacity less than 5 gals. per hour, 80° to 50° with 80° ambient temperature.
18. Evaporative coolers, less than 2,000 c.f.m.
19. Farm freezers (for the freezing and storing of food on a farm).
20. Florist boxes.
21. Fountainettes.
22. Frozen food cabinets, low temperature, not designed for use aboard ship or for use in mobile hospital units.
23. Ice cream cabinets, not designed for use abroad ship.
24. Ice cube makers, self-container cabinet type.
25. Salad coolers (Bain Marie), mechanical.
26. Self-contained air conditioning units, 2 hp. or less.
27. Soda fountains, not designed for use aboard ship.
28. Refrigerated wall type display cases.

Note: In no case shall the name or description of any equipment as listed above, include any fixture or item which is not within the meaning of that name or description as customarily used within the trade or industry, even though a particular fixture or item (not within such meaning) could be used for the same or a similar purpose. For example, a "walk-in refrigerator" may not be delivered unrestricted on the ground that it is to be, or could be, used as a "beer pre-cooler" since it is not generally recognized in the trade as being within the meaning of a "beer pre-cooler."

LIST C—ESSENTIAL USES

Systems and parts (other than items on Lists A and B) may be delivered only on approved orders and for the following purposes, in accordance with paragraph (d)(3):

Part 1—Applications to materials, production, or facilities:

Mining, industrial, scientific, and technical processes and operations where lowering of temperature, or removing water vapor, or freedom from dust and other impurities, are necessary for production, storage, transportation, operation or repair of materials or products, or precision functioning thereof, when, and to the extent essential for any of the following purposes:

1. Abrasives—production
2. Aerial topography rooms aboard ship
3. Airplanes and parts—production and repair
4. Airport control towers
5. Altitude and low temperature test chambers and laboratories
6. Ammunitions and explosives—production, storage and transportation
7. Blood plasma — processing, storage, and transportation
8. Blast furnaces (dry blast)—operation
9. Ceramics, electric and dielectric—production
10. Chemicals, including acids, gases, pigments and plastics, where new, additional or continuous productive capacity is essential—production
11. Dairy products—processing, storage, dispensing, and transportation
12. Duplicating processes; such as, photographic, photostatic, and lithographic —processing and storage.
13. Communications products—production, and operation or relay stations and exchanges
14. Films, photographic, for military purposes—production and storage.
15. Fire control calculation rooms, underground fortifications plotting—switchboard rooms, wine casemates, command posts, and seacoast battery service magazines
16. Foods—processing, storage, dispensing and transportation

Note: Acquiring parts for assembly into List A items is prohibited by paragraph (c)(4)

17. Fur cloth for military purposes—storage
18. Glass—non-shatterable—production
19. Ice—production and storage
20. Laboratories—research, analytical, and testing
21. Navigation instruments — production, storage, and repair
22. Optical goods; such as, bomb and gun sights, range finders, telescopes, and microscopes—production, storage, and repair
23. Ordnance, precision parts—production
24. Parachute and balloon — production and storage
25. Pharmaceuticals, drugs, and biological products—production, storage, and transportation
26. Petroleum products—production, natural gasoline recovery, transportation, refining, and marketing
27. Plants and factories—where excessive temperatures, contamination of air, or variations in temperature or humidity would seriously impair the effective use or production of precision instruments, tools, or products and materials to fill a "defense order" as defined in Section 944.1 of Priorities Regulation No. 1.
28. Precision instruments, tools or products—production, storage, operation, and repair
29. Synthetic critical products—production
30. Test cells, engine

Part II—Application affecting human life or physical capacity:

a. Plants and factories—producing equipment and materials to fill a "defense order" as defined in Section 944.1 of Priorities Regulation 1, where excessive temperature or contamination of air would be dangerous to health or result in working conditions unfit for human occupancy. The application shall exclude offices, conference rooms, drafting rooms, cafeterias, restaurants, dispensaries, first aid, change and rest rooms, except in "blackout" or "windowless" buildings or any sealed or interior space, where mechanical ventilation will not suffice.
b. Celestial navigation trainers.
c. Hospital rooms, stationary or portable, military or civilian, for surgical operations or critical convalescent treatment (excluding normal hospitalization), X-ray rooms and Flight Surgeons Clinics.
4. Link trainer rooms.
e. Naval vessels of all types.
f. Tanks, combat.
g. Underground mines, communication rooms, air raid shelters, and plants and factories producing essential materials, where excessive temperature or contamination of air would be dangerous to health or result in working conditions unfit for human occupancy; and then only to the minimum extent required.
h. Waller gunnery trainers.
i. "Jam Handy" and instrument trainer buildings, for military use.

LIST D

Classes of Systems and Parts

(Note: No item on List A is deemed within any of these classes.)

The following classes of systems and parts are to be used in figuring the permitted quotas for any quarter under paragraph (h). If the producer's quota for any class would be greater under paragraph (h) (1), he can fill all unfilled orders on hand rated AA-5 or higher for that class. If it would be greater under (h) (2) for the quarter, his quota for the class is one-sixteenth of the dollar volume of that class made by him in 1940. This one-sixteenth quantity for any class may be made in addition to all orders for direct use by the Army, Navy, Maritime Commission and War Shipping Administration. Parts for maintenance and repair are not counted in the quotas.

1. High-sides (condensing units and compressors).
2. Low-sides (coils and unit coolers).
3. Reach-in and walk-in refrigerators.
4. Drinking water coolers, mechanical, pressure type, capacity 5 gals. per hour and over, and from 80° to 50° with 80° ambient temperature.
5. Condensers.
6. All other systems and parts (other than these on List A.)

LIST B

ITEMS WHICH MAY BE DELIVERED FOR SPECIAL USES

Note: Under paragraph (c) (2), deliveries of the following items may be made for use by the persons and under the conditions specified below. These persons are assigned a rating of AA-5 under paragraph (d) (2) unless their orders are otherwise rated. Deliveries of these items to **other** persons are permitted only if they can place approved orders of the kinds specified in subparagraphs (d) (1) or (d) (4).

Type of Equipment	Deliveries permitted for direct use by
1. Drinking water coolers, mechanical, designed for use abroad ship.	Army, Navy, Maritime Commission, or War Shipping Administration, for use abroad ship.
2. Drinking water coolers, mechanical, pressure type, capacity 5 gals. per hour and over, and from 80° to 50° with 80° ambient temperature.	Army, Navy, Maritime Commission, War Shipping Administration, hospitals, Petroleum Operators as defined in Order P-98-b, or industrial plants (excluding offices, rest rooms, and recreation rooms) manufacturing any product or conducting any business or activity listed on Schedule I of CMP Regulation 5; **provided** that no existing water cooler shall be replaced except for maintenance and repair as defined in CMP Regulation 5; and that the maximum inlet water temperature is in excess of 70° F. In the case of new installations, a cooler may not be required unless it is intended that no less than the following number of people will be served per gallon of water cooled per hour for each cooler installed (including new and existing):

Installation	No. of persons served per gal. of water cooled per hour
In Army, Navy, Maritime Commission or War Shipping Administration Installations, or in Manufacturing, Refining, or natural gasoline recovery Plants.	
In Steel Mills, Foundries, Forge Shops and Smelting Plants	5 (Bubbler Service)
In Industrial Plant	16 (Cup Service)
Cafeterias	
In Hospitals (military or civilian	16 (Cup Service)

3. Evaporative coolers 2,000 c.f.m. and larger.	Army, Navy, Maritime Commission, War Shipping Administration, National Housing Administration, or any person acquiring the cooler for any essential use shown on List C; provided that the installation is to be made in a desert area.
4. Refrigeration systems for farm milk coolers.	Any person who has a purchase certificate from a County Farm Rationing Committee, pursuant to applicable orders of the War Food Administration; also any producer of farm milk coolers operating under Orders L-257 or L-257-a, who may use the ratings assigned to his production schedule.
5. Frozen food cabinets, low temperature, designed for use aboard ship or for use in mobile hospital units.	Army, Navy, Maritime Commission, or War Shipping Administration, for use aboard ship or for use in mobile hospital units, including but not limited to hospital cars.
6. Ice cream cabinets, designed for use aboard ship.	Army, Navy, Maritime Commission, or War Shipping Administration, for use aboard ship.
7. Mortuary refrigerators.	Army, Navy, Maritime Commission, War Shipping Administration, institutions or hospitals.
8. Portable bulk ice makers.	Army, Navy Maritime Commission, or War Shipping Administration.
9. Soda fountains, designed for use aboard ship.	Army, Navy, Maritime Commission, or War Shipping Administration, for use aboard ship.
10. Ice cream freezers, commercial 20 quart capacity or less.	Army or Navy, for use aboard ship or in advance bases (outside the 48 states and District of Columbia).

Kathleen Robertson Enlists In WACS

NEW YORK CITY—Kathleen Robertson, household equipment editor of "McCall's Mamazine," has enlisted in the WACS.

According to an announcement by Camille Davied, homemaking editor of "McCall's," Miss Robertson's duties will be taken over by Miss Elizabeth Sweeney.

Birmingham Outlet Faces OPA Suit

BIRMINGHAM, Ala. — Alleging violations of maximum price regulations, the OPA has filed a treble damages suit against Albert L. Roseman and the Birmingham Wholesale Co. in U. S. District Court here.

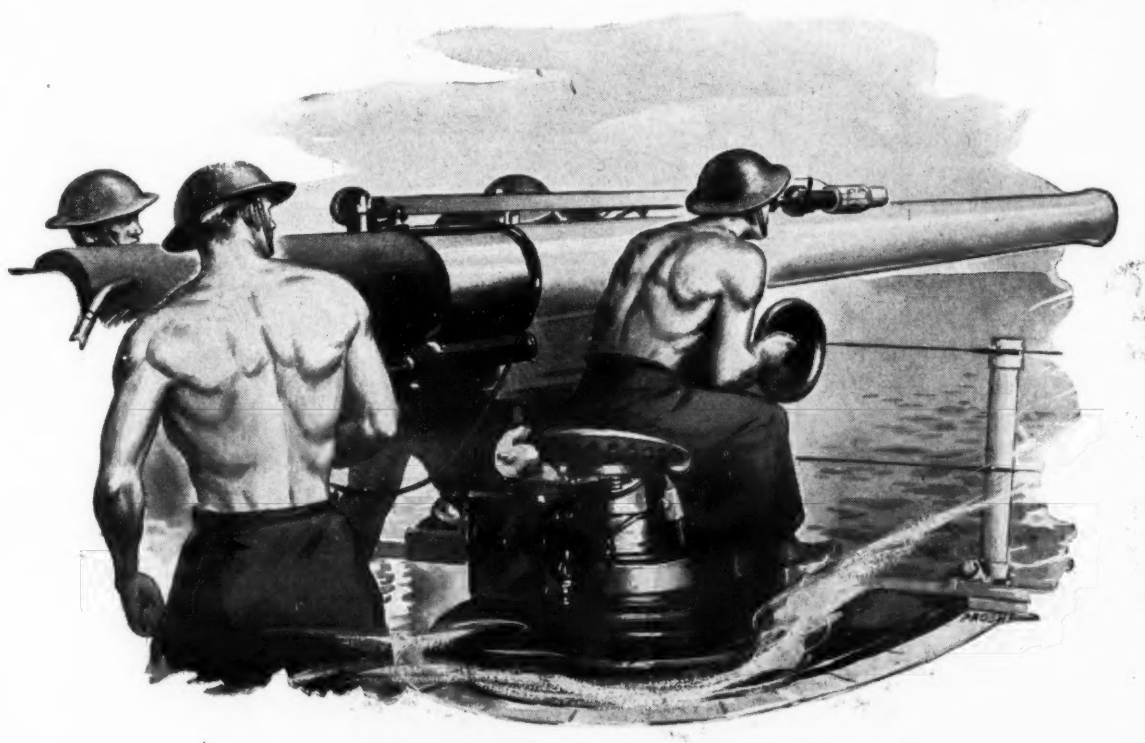
The complaint charged that the company had between December, 1942, and the present sold electrical supplies at higher than ceiling prices to various retailers in Birmingham and throughout Alabama.

"The amounts so received by the defendants from such purchasers in excess of such maximum prices totals $5,000," the complaint alleges. The complaint further charged the company with failure to keep records in compliance with general maximum price regulations.

The suit demands treble damages which amount to $17,296, plus court costs and attorney fees.

Fresno Locker Plant To Add 500 Units

FRESNO, Calif. — Five hundred new frozen food lockers will be added to the plant of Zero Food Lockers at 225 McKinley Ave., Fresno, Calif. Signers for the additional lockers to comply with government requirements and obtain the necessary priority, are being obtained through newspaper display advertising.



WHAT HAS A SEA BATTLE TO DO WITH YOUR CONTROL REQUIREMENTS?

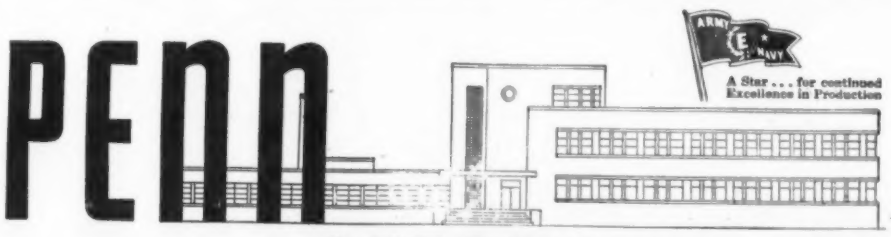
In a split-second after steel-nerved men at our navy guns get the range, shells go crashing toward the enemy target. The guns have been stung to action by an electric trigger switch!

Instant... unfailing response to the gunner's touch must come from the firing control circuit—a "harness" of electric cables, junction boxes, snap switches, transformer, fuses and solenoid mounted on each gun. The fate of a ship and its crew... perhaps the safety of a convoy... or even the outcome of a battle may hang on the speed and dependability of these electric controls.

Part of our work for the armed forces is to supply these lighting and firing circuits for the Navy's 3" and 5" guns. Because our skilled workers and critical materials must meet this urgent need, the number of Penn controls available is necessarily limited.

However, we are able to supply automatic refrigeration controls to meet vital commercial and industrial needs. We suggest you ask your jobber—or write us about controls for your requirements. And remember this... *our experience in meeting the exacting requirements of battle-worthy equipment will be reflected in still better Penn controls for post-war refrigeration and air conditioning.* That is what a sea battle has to do with your control requirements. *Penn Electric Switch Co., Goshen, Ind.* In Canada: Powerlite Devices, Ltd., Toronto, Ont.

PENN



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

(Above) Francis Annette of Douglas Aircraft's Santa Monica plant, brings aluminum alloy airplane parts into the cold storage room where temperature is maintained at 10° F. by Carrier equipment. Parts strengthened through heat treatment soon emerge from the annealed state unless stored at proper temperature.

Cooling Strengthens Soft Aluminum for Douglas Planes

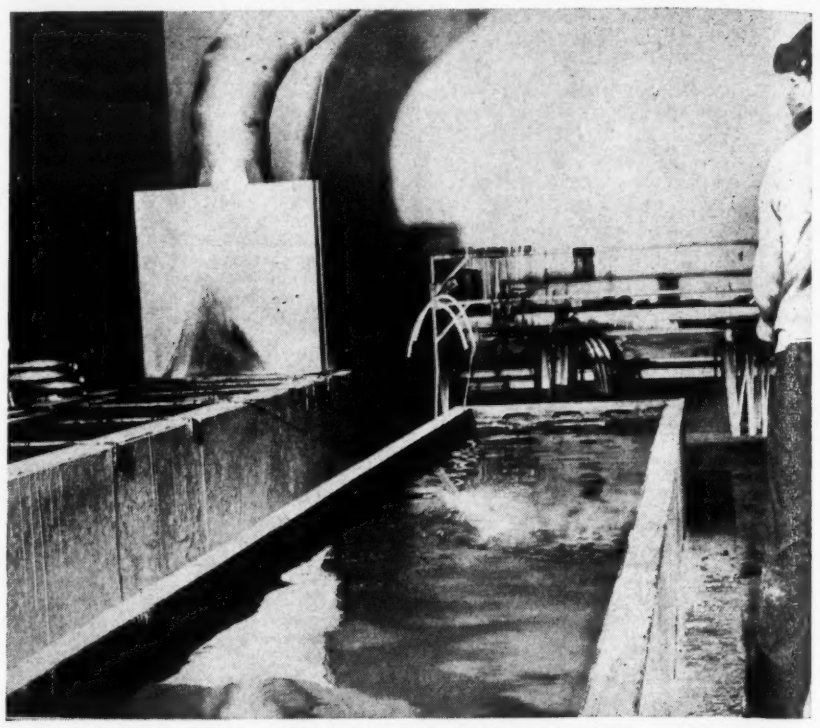
SANTA MONICA, Calif.—How refrigeration equipment serves in the production of aluminum aircraft parts at the Santa Monica plant of Douglas Aircraft Co. was told recently by an official of the company.

Temperature, it is explained, is the principal factor in strengthening the comparatively soft aluminum alloy so it will become virtually as hard as steel and will stand up under the stern test demanded in Douglas bombers and cargo planes.

The aluminum alloy, in the shape of various aircraft parts, is first brought into the big heat-treat room at Douglas and plunged into a tank containing a solution of nitrate salt at 950° F. After a relatively brief period in the nitrate heat bath, the alloy is whisked into the air and immersed in a water quench tank which is kept at 42° to 45° by Carrier refrigeration equipment. The tank measures 4 x 20 x 6 feet and has a capacity of 3,500 gallons.

The quick dash into the water quench tank is necessary as a "delayed" quench causes grain segregation, with subsequent corrosion and weakening of the metal.

Following emergence in another tank, if not needed for immediate stamping, the material is stored at 10° F. in order to retain its annealed state for stamping or extruding at a later date. Otherwise hardening would set in within two hours and the anneal lost completely in three days. Aluminum parts are held in storage for as long as 30 days. The cold storage room is held at proper temperature by refrigeration equipment.



After a bath in nitrate salt solution at 950° F., aluminum alloy parts are quickly quenched in the above tank containing 3,500 gallons of water held at 42 to 45° F. by refrigerating equipment in the Douglas Aircraft Santa Monica plant.

Gay Engineering Starts Addition to Factory

LOS ANGELES—A new factory building addition to the huge plant of the Gay Engineering Co., refrigeration concern, is being erected by the company at 2708 East Twelfth street, to provide an additional 13,300 square feet of floor space at a cost of $20,000.

Shell Production Wins 'E' Award For Peerless

MARION, Ind.—The Army-Navy "E" award was presented to the employes and management of Peerless of America, Inc., at ceremonies held in Memorial Coliseum here Nov. 24.

Production of 3-inch and 75 mm. shells, gun mounts for jeeps, oxygen demand regulators and cylinders, tachometer drives, gasoline segregators, as well as refrigerating equipment for the Army, Navy, and synthetic rubber plants won the award for Peerless.

The U. S. Army was represented by Lt. Col. George M. Enos, director of engineers of the Cincinnati Ordnance District, who presented the Army-Navy "E" burgee to President R. W. Kritzer of Peerless, and Pfc. Richard Leaf, convalescing from wounds received while fighting Japs at Burma.

Lt. Cmdr. William C. Duvall, U.S.N.R., representing the Navy, gave the lapel "E" pins to the following representatives of the more than 1,200 Peerless employes: Robert M. Carberry, works manager; Folke Selen, oldest employee in point of service; Mrs. Lillie B. Bennett, mother of four sons in the Armed Forces and representative of women workers; Rev. James Buggs, treasurer, and Brandt Garinger, president of the union local.

Chairman of the ceremony was Paul S. Perry, president of Perry-Brown, Inc., Cincinnati.

Mel W. Knight, general sales manager and assistant to the president, made a speech on behalf of the sales department congratulating the production forces of the company.

Peerless employes, their relatives, and friends, were feted by the company the evening of Nov. 27 with a party and dance at the Marion Armory. A seven-act floor show with music by an NBC network orchestra provided the entertainment.

In connection with the award, Mr. Knight revealed that every cantonment in the United States and its territorial possessions has a refrigerator or air conditioning system equipped with Peerless' "Thermek" coils, the "porcupine tubing" which Peerless introduced in 1938.

'Portable' Locker Rooms Designed By Fogel Co.

PHILADELPHIA — "Packaged" portable locker rooms ranging in capacity from 40 to 90 lockers have been designed by Fogel Refrigerator Co. here and will go into production as soon as WPB limitation orders permit, according to Albert Fogel.

The portable locker room can accommodate an enclosed "quick freeze" section, and is said to be fully equipped with locker compartments. The locker compartment, however, is of a sectional design and can be removed from the room or rearranged for additional floor or "quick freeze" space. The room may also be stripped of lockers and used for bulk storage at 0° F.

The various size locker rooms are said to be of standard size so that a plant's locker capacity can be increased by installation of additional units, which might also serve as chill rooms.

Because of the compact design and complete engineering as a package job, installation of the locker rooms is claimed to be inexpensive. This also facilitates moving of the rooms to other locations, it is said.

It is expected that these units will find a ready market in rural areas, where a few farmers could form a cooperative plant, Mr. Fogel declared. The units could also be located in wholesale and retail meat shops, or general food stores in large or small cities.

At the present time the Fogel company is accepting blanket orders for the locker rooms against the time when production is permitted. Prices are based on estimates, but the actual price will undoubtedly be lower, Mr. Fogel declared.

For: TRUCKS, LOCKERS, COOLERS, COUNTERS, CABINET CONVERSIONS, use:

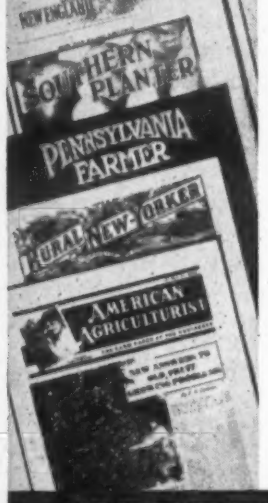
KOLD-HOLD PLATES

KOLD-HOLD MFG. CO.
LANSING, MICH., U.S.A.

More than a Million Farm Families are Learning About HARDER Home Freezers Every Month!

HARDER HOME FREEZER

These leading magazines carry Harder Home Freezer ads each month.



HARDER Home Freezer advertising reaches more than a million farm homes each month—through leading farm magazines. A flood of inquiries indicates the ever-increasing interest and demand for HARDER Home Freezers—a ready-made market which you can cash in on when the war is over or when high quality materials are again available for building HARDER Home Freezers. Right now our plant is turning out materials of war, but after victory these freezers will be available under the well known HARDER name or under your own trade name.

Why not write us today for information about HARDER Home Freezers and tell us about your plans for distribution.

HARDER Refrigerator Corporation
A Good Name Since 1859
COBLESKILL, NEW YORK

★ ★ ★ BUY WAR BONDS — SPEED VICTORY ★ ★ ★

A Backlog

of Friendship

TIME was when an accumulated backlog of orders measured the public acceptance of any product.

But, above the thickness of the order bank, we at Tecumseh Products Company have always treasured the backlog of friendships built up by Chieftain products in the hands of users.

—Products requiring a minimum of service;
—Products standing up to all emergency wartime needs;
—Products lasting longer, and performing better than could reasonably be expected.

That is, indeed, a priceless foundation for any postwar program!

We are still building Chieftain compressors and condensing units for the armed forces and for priority civilian requirements, and we are always available for consultation on any present or postwar refrigeration needs.

Against this limited scale of normal operations, however, we are looking expectantly to a tremendous upsurge in product "friendships" when peace once more prevails.

Chieftain

TECUMSEH PRODUCTS CO.
TECUMSEH • MICHIGAN

New Firing Range For Big Aircraft Cannon Puts Guns Through 140° Temperature Drop

Flying Conditions Simulated as Cooling Plant Drops Air from 70° to —70° In 12 Minutes

EGLIN, Fla.—New heavy calibre aircraft cannon soon will pump their shells over the world's shortest firing range — a distance of 22 feet — as engineers at the Eglin Field, Fla., Army Air Forces proving ground test the effectiveness of the big guns in a man-made stratosphere 70 degrees below zero.

The firing range, designed by York Corp. refrigeration engineers, will be twin steel vacuum chambers where temperature and air pressure will duplicate the stratosphere nine miles above the earth. In this atmosphere, shells will leave the muzzle of the guns, travel the length of the 22-foot range and plow into 20 tons of sand with the force of approximately 3,600,000 foot pounds of energy, according to John Bergdoll, chief of the York laboratories at York, Pa.

STUDY COMBAT CONDITIONS

"In the contest to equip high-altitude bombers with bigger and bigger calibre cannon and machine guns, aircraft designers must know more about the effect that lack of oxygen and sub-zero weather have on the detonation and the speed of projectiles," Mr. Bergdoll explained. "With this newest application of the stratosphere chamber, they can study at close range conditions which ordinarily could be observed only in actual combat.

"A modern stratosphere bomber rising from sea level to 40,000 feet endures a 140-degrees drop in temperature in a few minutes. This causes a terrific shock contraction of all metals, many of which will contract at different ratios. It is important to know how this affects firing mechanism and gun barrels.

EFFECTS OF MOISTURE

"Likewise," Mr. Bergdoll added, "at 40,000 feet the atmosphere approaches a near vacuum and makes possible greater speed for a projectile because of less resistance from the weight of air. The effect of low moisture content on delicate firing mechanisms and the greater concussion produced by big guns in rarefied air are among other questions which can now be studied."

Two steel cylinders and a third concrete sand trap will make up the stratosphere firing range, the whole covering a distance of only 50 feet. The first compartment will be a stratosphere chamber similar to that used to test pilots and plane equipment. In it will be mounted the gun to be tested with its barrel projecting forward through the front end of the chamber and into a concussion chamber.

With the muzzle of the gun just projecting into the concussion chamber, the shells will be fired across the 22-foot space and into another porthole at the forward end of the chamber. In back of this porthole will be the sand trap chamber of reinforced concrete with its back-stop of 20 tons of sand.

Even the shells from a 75 mm. cannon fired through the frigid artificial stratosphere can be stopped after they have traveled the length of the range despite the fact that they have energy equivalent to lifting an object weighing 1,800 tons a distance of one foot. Actually such shells would plow into the sand bank for a distance of 10 feet with enough pushing power theoretically to send a one pound projectile 680 miles. At the present time, the shortest known range for heavy calibre guns is 300 feet.

TWO MEN OPERATE GUNS

Two men equipped with oxygen masks will enter the main strato-chamber to operate the big guns. For each maximum test, temperature will be dropped from 70 above to 70 below zero in 12 minutes while air pressure is reduced to a partial vacuum of 2.2 pounds per square inch. In the concussion chamber ahead into which the muzzle of the guns project, temperature will be maintained at 67 degrees below zero. In this chamber, cylindrical steel walls must be constructed to absorb the shock of a concussion bursting pressure of 100 pounds for every square inch of surface.

12-HOUR PREPARATION

A period of 12 hours is required to prepare both the main strato-chamber and concussion chamber for one hour of testing. During this time, the refrigerant is circulated through coils in the upper portion of the chambers until the temperature drops below —70° F. Just before each test, this frigid air in the chambers will be warmed quickly by electric heaters to a normal 70 degrees above to simulate the start of a stratosphere flight. When the chambers are loaded and sealed, the warm air will be withdrawn and cold air together with the refrigeration built up in the walls will drop the temperature all the way back to 70 below in 12 minutes.

Transplanted Cooling System 'Saves Day' For Cotton Duck

Trucks Move 35,000 Lbs. of Equipment

BLOOMSBURG, Pa.—How American resourcefulness and ingenuity were applied to permit a carpet mill to switch over quickly to the manufacture of cotton duck for the government was told recently by officials of the Magee Carpet Co. here.

The story is one of cooperation between the company and air conditioning engineers in breaking what appeared to be an almost insuperable bottleneck.

OPERATING TROUBLES

Before the war, the Magee Carpet Co. worked primarily with wool. When war came, their looms were set up to make cotton duck for the Army, but difficulties were encountered with weather changes because the weave room was not equipped with humidity control. The weaving of cotton called for high humidity air and constant humidity control. It appeared that the required humidifying equipment would not be available under wartime restrictions, but the operating difficulties demanded an immediate solution to the problem.

Engineers of the Power Engineering Corp., Wilkes Barre, Pa., Carrier distributor, learned of a silk mill in Philadelphia which contained Carrier humidifying equipment and which had been closed down when silk became scarce. A checkup revealed that the equipment, although of the central station type and not normally thought of as "portable," would meet the requirements of the space to be humidified in the Magee mill at Bloomsburg.

Negotiations with the Philadelphia silk mill were quickly completed and dismantling began. As equipment was removed from the abandoned mill, each piece of ductwork, apparatus casing and connections, dampers, outlets, structural steel and all other parts were carefully marked so that re-assembly would be simplified as much as possible. All parts of the complete equipment and accessories were salvaged, including structural steel supports, electrical conduits, switches and controls, steam and water piping.

DUCTWORK, TOO

A total of over 35,000 lbs. of equipment was loaded on trucks, often in pieces so large that the trucks had to take round about routes in order to miss low bridges. Upon arrival at Bloomsburg, the equipment was cleaned and painted, all dents and rough edges removed, and all controls and accessories checked and placed in first-class operating condition. Then reconstruction began. Equipment was reassembled with original steel supports, old duct work was carefully erected in the two zones of the Magee weave room, salvaged controls, wiring and piping were installed and the system placed in operation.

Today, the Magee Carpet Co. is weaving duck for the Army and the reclaimed Carrier equipment is serving as well as if it had been designed originally for the Magee operation. The system is maintaining a constant relative humidity of 70%, which assures uniform production. Idle equipment has been put to work, critical materials salvaged, and a first-class installation obtained.

New Troopships Are Air Conditioned

KEARNY, N. J.—Eliminating the need for portholes, air conditioning provides ventilation for men who sleep in tiers four-deep below decks aboard troopships being built at the Federal Shipbuilding and Dry Dock Co. plant here.

A modern hospital complete with operating room and wards is deep in the innards of each transport, primarily for use on return trips from fighting areas with a passenger list of wounded. The hospital also is completely air conditioned.

Fedders Opens Branch Office In Detroit

DETROIT—A new branch office, in charge of A. F. Ihde, has been opened in the General Motors Bldg. here by Fedders Mfg. Co., Inc., of Buffalo, N. Y.

K-15

MAGNETIC PILOTED PISTON VALVE

GENERAL CONTROL'S K-15, two-wire, current failure, is a high pressure valve handling large capacities with minimum pressure drop. Main valve held open electrically minimizes pressure loss. Packless, available normally closed. Operates on a wide variety of fluids and gases.

Write for Catalog 52.

GENERAL CONTROLS

801 ALLEN AVENUE
GLENDALE 1, CALIF.

Branches: Boston · New York · Philadelphia Cleveland · Detroit · Chicago · Dallas Denver · San Francisco

Wartime Manufacturers of Electro-Magnetic and Temperature Controls for Aircraft
Peacetime Producers of Automatic Pressure, Temperature, and Flow Controls.

Precision... IN COPPER BENDS

The large U-shaped bend illustrated above is a heat exchanger unit used in Army portable walk-in refrigerators with our armed forces overseas.

MUELLER BRASS CO.
PORT HURON, MICHIGAN

We manufacture copper pipe coils in a multitude of shapes and sizes. Smooth, round bends and exact dimensions are characteristic of Mueller Brass Co. coils. Copper tubing is manufactured in our own mills—exactly the right grade as specified for the particular part.

We specialize in tubular assemblies, wrought copper solder type fittings and return bends. Our equipment is the most modern procurable and adapted to low cost, high quality products. All tools for fabricating, forming and processing are made in our own Tool Making Department—the best possible tools for the job are thus obtained with the least possible delay.

Write us if you have requirements for specially fabricated copper tube. Our engineers will be glad to help solve the problem.

We make:
Standard Tubular Fittings
Headers and Manifolds (complete and semi finished)
Single Pipe and Double Pipe Copper Coils
Special Tubular Assemblies
Filters • Driers
Heat Interchangers

VALVES · FITTINGS
ACCESSORIES FOR
REFRIGERATION AND
AIR CONDITIONING

Army Refrigeration Problems

By P. B. Reed

Electric Refrigeration and Air Conditioning Division, Servel, Inc.

Use of Gauges Vs. Guessing

On most service calls the service engineer will want and will need to "put on the gauges," the high pressure gauge to check discharge pressure at the outlet of the compressor and the compound gauge to check suction pressure at the inlet of the compressor, while the compressor is running.

The readings of these gauges are the best clues to enable him to solve the mystery of the missing B.t.u.'s. By matching the gauge readings with other symptoms, such as the relative temperature (the feel) of various parts of the system he can often recognize the source of the trouble almost instantly. In other cases the cause isn't so apparent.

In very few cases are the causes so obvious as to make the use of the gauges unnecessary. In many instances the service man may find that without the gauges he has jumped to incorrect conclusions that are quickly disproved and shown to be wrong as soon as the gauges are put on. The gauges are his best tools. He should not handicap himself by not using them, regardless of how much experience he has had.

The Recording Pressure Gauge a Timesaver

Those service engineers who are so fortunate as to possess recording pressure gauges, especially the compound type for recording suction pressure, have an advantage over other service engineers, for by studying the chart record they can not only get a better picture of what the system is doing but they save a great deal of time.

Instead of sitting and watching the gauge to see what it reads during different parts of the cycle they can let the gauge watch and record it while they go elsewhere and do other work in the meantime. If you have a recording compound gauge it will certainly pay you to use it. If you haven't one, you probably can't get one now, but after the war this should be on your list of tools to buy when available.

Where Gauges Should Have Been Used

Here is an example of why the gauges should be used and why time and work is often wasted in diagnosing a case without putting on the gauges. A service engineer was called to a camp kitchen, having an air-cooled methyl chloride condensing unit on a reach-in refrigerator; unit running all the time, refrigerator temperature 57°. The kitchen was hot, but that didn't mean so much—most of them are. Charge checked okay, evaporator coil heavily frosted, suction line cool (indicating that the thermostatic expansion valve was adjusted and working properly), compressor hot (from which he decided that it was pumping normally).

The service engineer was busy—had seven more calls to make that day—so he didn't put on the gauges, but decided that everything was all right except that the evaporator needed defrosting. So he pulled the switch and told the cook to start the machine after the evaporator had melted free of frost and ice, and went on to the next call.

Two days later he got another call—same trouble. This time he put on the gauges. Discharge pressure 125 p.s.i. (pounds per square inch), suction 18 p.s.i. (indicating a 26° evaporator). The high suction pressure made him suspect the suction valves in the compressor, so he closed the suction service valve and the compressor would only pump a 15 inch vacuum, so the suction valves apparently were leaking.

He then stopped the compressor and watched the compound gauge. It gradually crept upward indicating that the discharge valves were leaking.

To be certain that the gradual rise of pressure on the compound gauge was not due to gas leaking by the suction service valve from the suction line, he opened the suction service valve until the gauge came to line pressure (then 25 p.s.i.) and then closed the suction service valve.

What the Gauges Showed

If the gauge hand had then crept up the pressure had to come from the condenser, indicating a discharge valve leak, for the low pressure in the compressor was as high as that in the suction line. The compound gauge remained stationary, showing that the discharge valves were holding, and that the suction service valve had leaked slightly before.

He closed the discharge service valve and removed the discharge pressure gauge. He removed the compressor head and valve plate and found quite a dent in one suction valve, as if it had been hit by a small piece of sand or metal at one time, putting the dent in it which held it slightly off the valve plate.

The seal itself wasn't damaged, so he put on a new suction valve, reassembled the compressor, and was able to pump a 27 inch vacuum when pumping the air out of the compressor. He then put his pressure gauge back on, opened the discharge service valve and again pumped a vacuum against discharge pressure getting 26 inches.

Thinking It Through

But, he thought, why the high high discharge pressure with a weak pumper before he changed the suction valve? The discharge pressure should have been low, with a bad suction valve. So he opened both discharge and suction service valves and ran the condensing unit. After about 15 minutes the suction pressure was down to about 16 p.s.i. (still a bit high) and the discharge pressure was up to 145 p.s.i., which made him suspect air in the system.

He stopped the unit for about 10 minutes, and purged the condenser from the discharge service valve. He repeated this several times until he finally got the unit to operate at an average of 13 p.s.i. suction pressure (18° evaporator) and 120 p.s.i. discharge pressure, which were normal for that installation (finned defrosting type coil) and the 90° room temperature. He was then able to carry an average refrigerator temperature of 40°.

This service engineer later found that another service engineer had been on the job a few days before and had found that the thermostatic expansion valve was not operating properly and had replaced it. In doing so he must have let the air into the system and perhaps a small piece of some foreign matter that damaged the suction valve, causing the dent, but later clearing itself and going over into the condenser.

The first man could have saved a lot of trouble, expense and time if he had been more careful when putting on the new expansion valve.

Warm Air Heating Group To Debate Problems In Cincinnati

CINCINNATI—How to make ready for meeting consumer demands in 1944 and coordination of postwar objectives of the industry when reconversion from wartime to full civilian production is possible will supply the theme of the thirtieth annual convention of the war air heating and air conditioning industry here in a one-day convention on Dec. 8.

Headlining the program for the wartime sessions of the National Warm Air Heating and Air Conditioning Assn. one-day convention to be held at the Hotel Netherland Plaza, Frank Kiso, chairman of Cincinnati convention arrangements will be top-flight Federal representatives and spokesmen for the industry.

Morgan N. Johnson, chief of the Warm Air Heating Section of the Plumbing and Heating Branch of the War Production Board and Charles S. Saunders, chief of the WPB's Office of Civilian Requirements Construction Section will have pertinent messages on the industry as viewed from their governmental positions.

Kise, with Lawrence Knollman, publicity chairman and **Joseph A.** Stermer, vice chairman of arrangements who are executives of the Williamson Heater Co., supervising the local program details, said that a two-day convention was planned. However, because of the war interest preoccupying attention of the industry, it was determined to concentrate the entire convention program in one day.

H. S. Sharp, Cleveland, president of the national association will preside at a meeting of the association's board of directors on Dec. 7.

Representatives of the Plumbing and Heating Division and Office of Civilian Requirements of WPB will attend the convention and discuss topics of vital industry to the industry and to the civilian consumers.

Outstanding men in the industry are coming to Cincinnati for special papers and discussions associated with the wartime manufacturing activities and the postwar outlook, Kise reported.

Thomas S. Holden, president of the F. W. Dodge Corp., New York, will discuss "Residential Construction in 1944 and Future Possibilities" at the convention session.

Labor problems affecting the industry will supply the theme of Walter L. Seelbach, member of the National War Labor Board for the Fifth Region with headquarters at Cleveland. Seelbach is an industry member of the board. He is president of the Gray Iron Founders Society and is secretary-treasurer of the Forest City Foundries Co.

Heating industry plans for postwar will be discussed by P. B. Zimmerman, president of the Indoor Climate Institute and vice president and general sales manager of the Airtemp division of Chrysler Corp.

Frederick V. Geier, president of the Cincinnati Milling Machine Co. and Community Chairman of the Committee of Economic Development will be a guest speaker at the convention luncheon session. He will speak on "Postwar Planning."

"Radiant Heating" is to be reviewed by H. F. Randolph, vice president of the International Heater Co.

George Boeddener, managing director of the Warm Air Heating association with headquarters in Cleveland in a bulletin to members urging attendance at the convention said "this industry will have a big job to do in 1944 to take care of civilian and defense housing requirements with the labor situation as it is."

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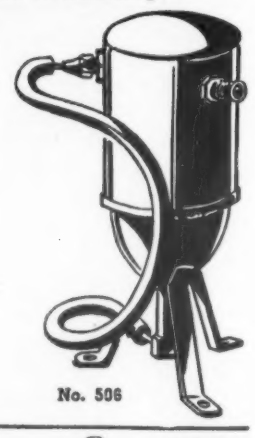
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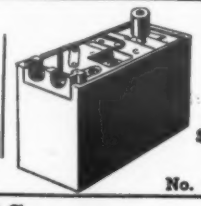
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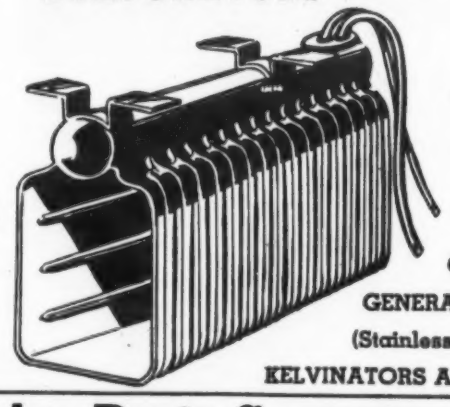

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Holders of Claims In Foreign Patents Asked to Report

WASHINGTON, D. C.—An order announced Nov. 22 by Leo T. Crowley, alien property custodian, requires all persons claiming any interest in trade-marks, commercial prints or labels now or formerly owned by nationals of desingated foreign countries, to report their interest, including any agreement or claims of ownership, on Form APC-31 by Feb. 1, 1944.

The purpose of the order, Mr. Crowley stated, are to locate and describe whatever interests are held in the United States with respect to trade-marks, commercial prints and labels of designated nationals and to obtain information in the national interest which will aid in the administration of those marks taken over by the custodian.

Specifically, the custodian's order No. 16 requires reports from any person claiming any right, title, or interest, including any claims of ownership, in whole or in part, any contract or agreement, whether written or unwritten and whether or not recorded in the United States Patent or Copyright Office, in or to any trade-mark, commercial print or label if obtained from a designated foreign national or anyone on his behalf on or before Jan. 1, 1939, or, regardless of when obtained, if on or after Jan. 1, 1939, money or other consideration has become payable or has been paid to a designated foreign national or anyone on his behalf with respect to such interest.

No reports need be made as to trade-marks, commercial prints or labels in which the interest of the reporter was obtained before Jan. 1, 1939, if, on or after that date, no money or other consideration was or has become owing or paid to a designated foreign national or anyone on his behalf.

Further provisions of the order require the filing of all agreements to which a designated foreign national is a party, with respect to or affecting any interest in any trade-mark, commercial print or label as to which a report is necessary.

For the purpose of the order a "designated foreign national" is a resident of any country other than the American Republics, the British Commonwealth of Nations, and the Union of Soviet Socialist Republics, and includes any person on the Proclaimed List of Certain Blocked Nationals as amended.

Copies of Form APC-31 and instructions for reporting may be obtained on and after Dec. 1, 1943, through the Office of Alien Property Custodian in Washington, New York, Chicago, and San Francisco.

Evans and Murphy Form Los Angeles Service Firm

LOS ANGELES—Rapid Refrigeration Service is the firm name under which F. A. Evans and E. J. Murphy have published an intention to conduct business at 7703 Melrose avenue, Los Angeles.

New Flaring Tool Is Used on Plastic Tubing

CHICAGO — A new flaring tool, which is designed specifically for use with plastic tubing and which produces the approved type, double thickness flare for connecting this tubing with flare fittings, has been introduced by the Imperial Brass Mfg. Co.

One tool handles the four most popular sizes of tubing: ⅜ inch, ½ inch, ⅝ inch and ¾ inch O.D. While the tool is designed especially for .062 inch wall tubing, it will also handle .031 inch wall.

The flare produced by this tool is called a "double flare" because the plastic tubing is folded back at the

Fig. 1

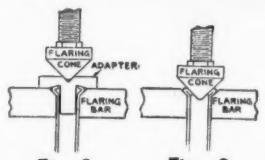


Fig. 2 Fig. 3

ends to form a flare with double-thick, double strength walls. This double flare is reported to offer the following advantages as compared to the ordinary single flare in making joints with larger sizes of plastic tubing:

(1) Makes joints having 35% greater resistance to pull-out.

(2) Retains its shape after flaring —does not snap back the way the single flare tends to do.

(3) Protects the wall of the tubing against being squeezed too thin in flaring.

The new tool is small and convenient to use right on the job, and it can be operated in very close quarters.

Complete tool consists of flaring bar, yoke with swivel cone and four adapters, all furnished in a metal kit. It is catalogued as No. 175-FP multi-size double flaring tool for plastic tubing and is fully described in Bulletin No. 338.

Viking Is Awarded Army-Navy 'E' For War Production

KANSAS CITY, Mo.—Viking Refrigerators, Inc., manufacturer of commercial refrigerators, has been awarded the Army-Navy production "E," with ceremonies scheduled to be held at the factory here Nov. 17, according to C. E. Corbin, vice president and sales manager.

The firm was organized in 1904 by the later Walter S. Dickey, who also owned the W. S. Dickey Mfg. Co. and the "Kansas City Journal Post." In 1936 the company was acquired by its present owners.

Officers of the company are headed by Ernest L. Stultz, president, who started with the firm 35 years ago as an apprentice in the factory. Arthur S. Bird is vice president and treasurer; Mr. Corbin, vice president and sales manager; Welch Jensen, secretary; and J. W. Allen, assistant treasurer.

Since the entry of U. S. A. in World War II the company has been producing refrigerators for the Army and Navy, and miscellaneous items for the Kansas City Quartermaster Depot, the Kansas City (Kan.) Medical Depot, North American Aviation, Inc., and other war agencies.

Appliance Concern Head In Shotgun Accident

ORLANDO, Fla. — Quick use of blood plasma probably saved the life of W. B. "Dick" Makinson, president of the W. B. Makinson Co. here, prominent appliance firm, when Makinson was the victim of a freak shotgun accident.

Returning from a hunting trip Nov. 14, Makinson was unloading hunting supplies from a light truck in front of his store when a 12-gauge shotgun toppled out. It struck the sidewalk and discharged into Mr. Makinson's right leg, causing a compound fracture of both bones.

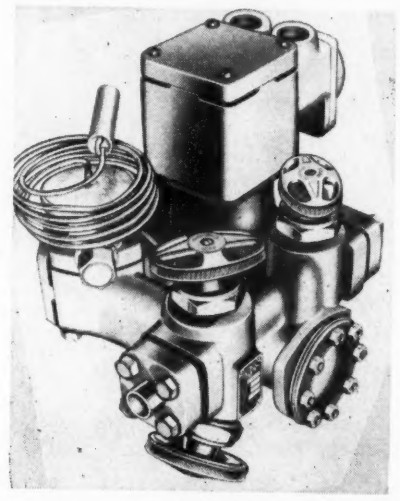
Two soldiers passing by witnessed the accident, and immediately bound a necktie tourniquet around the dealer's leg, applying first aid before he was rushed to Osceola hospital. There he was found to be in a critical shock condition which was overcome with blood plasma injections.

Control Valve Manifold Combines Many Jobs

ST. LOUIS—Alco Valve Co. has issued a new bulletin on an assembly known as Navy type "Q" control valve manifold, primarily intended for automatic refrigerant control abroard ship, but adaptable to many refrigeration installations.

Worked out in cooperation with the U. S. Navy Department and the Henry Valve Co., Chicago, this manifold is designed to replace built-up by-pass assemblies, thereby eliminating a number of joints or potential refrigerant leaks.

This elimination of numerous joints is said to be vital on shipboard be-



cause of engine vibration, racking and straining, gun firing, and shell explosions. However, many other installations would be practicable and economical, particularly where the factor of vibration is present.

Also, since space on ships is at a premium, the manifold combines into one compact assembly: solenoid valve, thermostatic expansion valve, strainer, shut-off valves, hand expansion valve, flanged line connections, and a mounting bracket. Standard Alco Navy type Thermo valve power assemblies and cages are used in the unit. It is made in a wide range of capacities, voltages, and line connections.

Wisconsin Hunters Fill Lockers With Game

LA CROSSE, Wis.—Loud acclaim for frozen food lockers has been expressed by Wisconsin sportsmen this fall as they discover the lockers keep supplies of fish and game, such as pheasants and ducks, until ready for use. Venison can also be stored to advantage, they find.

George Phillips, owner of the Polar Chest Frozen Food Locker plant in La Crosse, finds that more hunters than ever are using his facilities to keep their game until they want to eat it.

Too, this plant has found great favor with many residents of this community, who use lockers for the storage of rationed foods as well as for fresh fruits and vegetables, many of the latter from their own Victory gardens.

Polar Chest has a complete butchering department to serve in the cutting of meats to proper-sized proportions. Each cut is wrapped and stamped so the locker holder can easily pick out the choice for his meal.

Unique feature of the Polar Chest plant is that the locker renter does not need to enter a sub-zero room to open his compartment. Arranged in tiers of five lockers, the individual compartments are raised from the floor to arm level for accessibility.

Phillips points out to his customers that under a revised OPA regulation a person may consume meat without giving up ration points if (1) he raised the livestock from birth, or (2) owned same for a period of 60 days immediately before slaughter, or (3) the weight has increased at least 35% between the time he acquired the livestock and the time of slaughter.

The fact that such meat can be cut up and stored in the plant without surrendering points increases the number of locker users, Phillips stated.

For his customers Phillips distributes a booklet on "Facts About Freezing Foods," which explains the selection of foods for storage in the lockers and gives explanations for their preparation for table use. Numerous recipes are also included in the booklet.

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Under this plan, you use spare time at home to improve your present knowledge of refrigeration principles, controls, refrigerants, and other subjects. Then you come here for a brief, intensive period of actual shop practice with real tools, parts and equipment. This combination home-study—shop practice BALANCED training is so thorough, so practical, so valuable to the ambitious man that its low cost is often paid for in a short time through increased earning power.

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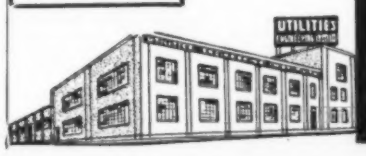

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PERMANENCE—A mineral wool product, Zerocel is not subject to deterioration with age. It is water-repellent, odorless, and immune to fungi and vermin.

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Gold Bond Zerocel is not a newly developed material. It has built an outstanding record of performance for years in all types of refrigerated structures designed to maintain temperatures down to 40° below zero. *It is manufactured to comply with U. S. Department of Commerce Commercial Standard CS105-43.*

We will be glad to send samples and literature. Write to Industrial Division, National Gypsum Company, Buffalo, New York.

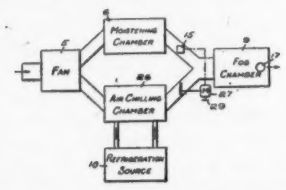
GOLD BOND ZEROCEL

PATENTS

Weeks of Oct. 19 & 26

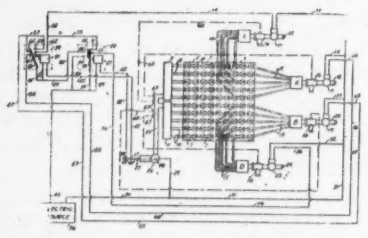
(Continued from Nov. 22 Issue)

2,332,975. AIR CONDITIONING SYSTEM UTILIZING REFRIGERATION. Robert T. Palmer, Sharon, Mass., assignor to B. F. Sturtevant Co., Boston, Mass. Original application Aug. 17, 1940, Serial No. 352,997. Divided and this application Jan. 1, 1943, Serial No. 471,053. 1 Claim. (Cl. 236—44).



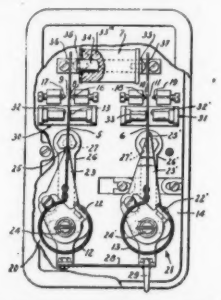
An air conditioning system comprising an air moistener, an air chiller, air moving means for moving air in streams through said moistener and chiller, a fog chamber, means for supplying the air stream from said moistener into said chamber, means for supplying the air stream from said chiller into said chamber, means for controlling the volume of air entering said chamber from said chiller, and means responsive to changes in the dew point temperature of the air entering said chamber from said moistener for controlling said volume control means whereby upon a rise in said dew point temperature the volume of air from said chiller is increased.

2,332,981. VARIABLE SURFACE EVAPORATOR. Samuel M. Anderson, Sharon, Mass., assignor to B. F. Sturtevant Co., Boston, Mass. Application Dec. 16, 1939, Serial No. 309,599. 11 Claims. (Cl. 62—8).



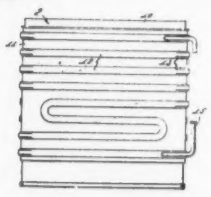
7. An air cooler comprising a plurality of conduits, each extending from one end of said cooler to the other and including an inlet and an outlet; a refrigerant distributor connected to the inlet of each conduit; a second distributor connected to each conduit between the inlet and the outlet thereof; a valve arranged to control the flow of refrigerant through the first distributor; a second valve arranged to control the flow of refrigerant through the second distributor; and means, responsive to a condition brought about by the evaporation of refrigerant in said conduits for operating said valves to permit the flow of refrigerant selectively through one or the other of said distributors.

2,332,985. CONDITION RESPONSE INSTRUMENT. Clark V. Bullen, Rockford, Ill., assignor to Barber-Coleman Co., Rockford, Ill., a corporation of Illinois. Application Sept. 8, 1941, Serial No. 410,052. 5 Claims. (Cl. 236—74).



1. A condition responsive instrument for controlling the operation of a conditioning means comprising, in combination, two control devices adapted for the control of said conditioning means differentially, elements movable independently of each other to actuate the respective devices, condition responsive means exerting variable control forces on said elements, detent means associated with the respective elements to cause movement of each element between two limit positions with a snap action, magnetic armatures carried by the respective elements, and an electromagnet having poles disposed adjacent said armatures and acting thereon to exert continuous but variable forces on said elements counteracting the control forces acting on said elements.

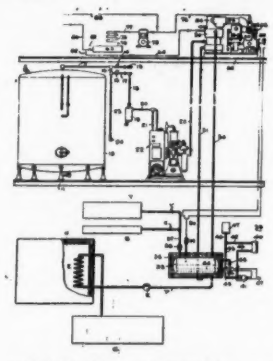
2,333,012. REFRIGERATING SYSTEM. Wayne D. Jordan, Chicago, and Paul D. Van Vliet, Galesburg, Ill., assignors to The Liquid Carbonic Corp., Chicago, Ill., a corporation of Delaware. Application Feb. 20, 1941, Serial No. 379,740. 9 Claims. (Cl. 62—126).



1. A combined storage receptacle and evaporator for refrigerators comprising a substantially rectangular inner sleeve having a closed bottom and an outer sleeve having channels or corrugations formed therein extending horizontally thereof and inter-connected to provide refrigerant passages between the outer and inner sleeves, said outer sleeve having a gas-tight junction with the inner sleeve between and outside of said corrugations and hollow reenforcing members arranged in said corrugations between the inner and outer sleeves at the bend points of said sleeves.

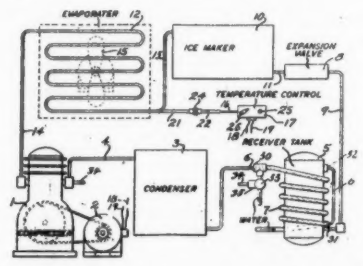
Weeks of Nov. 2 & 9

2,333,154. REFRIGERATION APPARATUS. Louis De Markus, Blawnox, and Leon Buechler, Jr., Waynesboro, Pa., assignors to Frick Co., Waynesboro, Pa., a corporation of Pennsylvania. Application Oct. 10, 1939, Serial No. 298,864. 15 Claims. (Cl. 62—122).



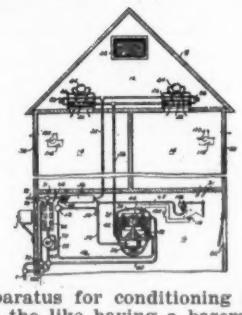
1. In refrigeration apparatus, an evaporator, a fermentation tank of the character utilized in the manufacture of beer, means for passing evolved fermentation gas in heat exchange relation with said evaporator to condense a condensible portion of said gas, means for collecting said condensate including a gas space for housing vapor above said condensate including a non-condensible portion, means for carbonating a product of said fermentation tank such as beer, a means for utilizing said condensate removed from below the liquid level in said collecting means in said carbonating means.

2,333,296. REFRIGERATOR. John B. Cocanour, San Jose, Calif., assignor to Col-Temp Corp., San Francisco, Calif., a corporation of California. Application Jan. 7, 1941, Serial No. 373,389. 6 Claims. (Cl. 62—4).



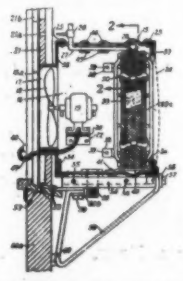
1. In combination, an evaporator coil for a refrigerator, a sleeve projecting from the coil so as to form an alined continuation of a coil section, a capillary tube having a refrigerant therein, a second sleeve mounted upon the said tube to form a closure therewith and means for coupling the two sleeves, with one section of the capillary tube projecting into the said coil section.

2,333,309. REFRIGERATING APPARATUS. Richard E. Gould, Oakwood, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application April 25, 1941, Serial No. 390,383. 5 Claims. (Cl. 62—6).



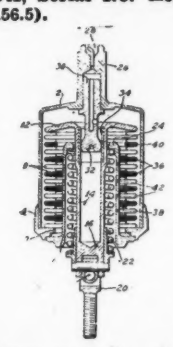
1. Apparatus for conditioning air for a home or the like having a basement room comprising in combination, a condenser casing located in said basement room, a motor within said casing, a compressor within said casing and driven by said motor, baffle means within said casing cooperating with said casing to form a condensing pocket having one wall exposed to the basement room air, an evaporator in refrigerant flow relationship with said compressor and said condensing pocket, means for flowing a heat transferring liquid in thermal exchange with said evaporator and thereafter with air to be conditioned, means for thereafter flowing said liquid in thermal exchange with said condensing pocket, and means for exhausting air from the conditioned space through said basement room.

2,333,374. EVAPORATIVE AIR COOLER AND WINDOW SUPPORT. William S. Guthrie, Los Angeles, Calif. Application Sept. 9, 1941, Serial No. 410,191. 5 Claims. (Cl. 261—97).



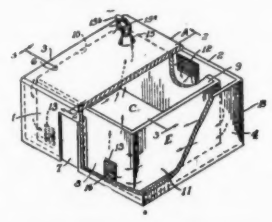
1. An evaporative air cooler having a body with an air chamber therein, an air inlet for the air chamber, a porous moisture pad vertically positioned in said air inlet, a water distributor tube having a series of predetermined spaced orifices adapted to discharge water into the porous filler of said moisture pad at points between the sides thereof, means for supporting said distributor tube; and additional means extending outwardly from the surface of said distributor tube adapted to prevent water creeping along the exterior thereof between said orifices.

2,333,401. BELLOWS CONTROL UNIT. John E. Woods, Brookline, Mass., assignor to Clifford Mfg. Co., Boston, Mass., a corporation of Delaware. Application Dec. 31, 1941, Serial No. 425,249. 5 Claims. (Cl. 137—156.5).



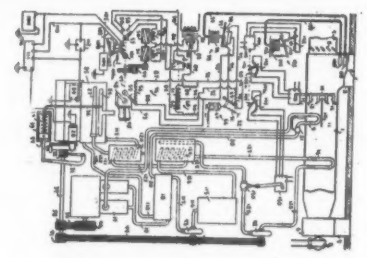
1. A bellows control unit comprising a bellows, a fixed sleeve member having a wall opposed to the bellows and spaced therefrom, and separate loading rings of compressible material fitting in several of the folds of the bellows and bearing against the sleeve member to prevent the occurrence of sustained vibrations in the bellows while permitting free response thereof substantially in accordance with the characteristics of the bellows.

2,333,556. INSULATING AND AIR-CONDITIONED BUILDING CONSTRUCTION. George B. Quatman, Lima, Ohio. Application Feb. 10, 1941, Serial No. 378,274. 6 Claims. (Cl. 98—31).



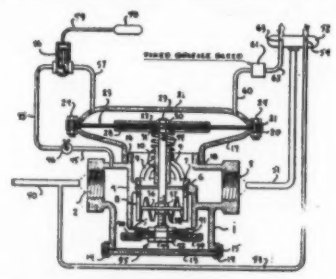
1. In a building construction of the class described, in combination, a room or enclosure, a second enclosure surrounding the first and defining a closed passage extending around said room, said second enclosure having an opening affording communication from the space between said enclosures to the outside of the second enclosure, said first enclosure having an opening affording communication from the space between said enclosures to the interior of said first enclosure, a means of communication from the interior of the first enclosure direct to the outside of the second enclosure, and means for causing outside air to be introduced into the space between said enclosures through the first opening and to circulate through said space to the interior of said first enclosure through said second opening, thence from the interior of said first enclosure to the outside through said means of communication, combined with closures for said openings and said means of communication, and temperature controlled means for operating said closures to open and close the same in accordance with variations in temperature within said first enclosure, whereby when the temperature in the latter rises above a pre-determined point said closures will be operated to open the same enabling operation of said first means and when the temperature in the first enclosure descends to said predetermined point said closures will be operated to close the same to seal the air in the space between said enclosures to thereby provide an insulating air space surrounding said first enclosure.

2,333,729. AIR CONDITIONING SYSTEM. Leo B. Miller, Milwaukee, Wis., William L. McGrath, Philadelphia, Pa., and John E. Haines, Minneapolis, Minn., assignors to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Original application July 16, 1937, Serial No. 154,025. Divided and this application Sept. 2, 1941, Serial No. 409,226. 9 Claims. (Cl. 257—3).



7. In an air conditioning system, in combination, a cooling device through which air is adapted to be passed for a conditioning action thereof for conditioning a space, means for supplying cooling fluid to said cooling device comprising a mechanical refrigeration system having a compressor, means for controlling the operation of said compressor in accordance with the pressures within said refrigeration system, a reheating device for heating said air, and means responsive to the temperature and humidity of the air in the space for controlling said reheating device to maintain varying temperatures therein dependent upon the humidity.

2,333,775. CONTROL VALVE. Willis H. Gille, St. Paul, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware.



(Continued on Page 27, Column 2)

MECHANICAL REFRIGERATION

LARKIN

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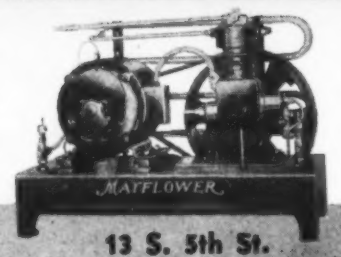

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WANTED—3 inch, 4 inch, 5 inch double ammonia self-contained units. Give complete details as to make, age, condition, and price. MARYLAND REFRIGERATION CO., 706 N. Howard St., Baltimore, Md.

USED CONDENSING UNITS. We want to buy some ½ and ¾ 110-220 volt 60 cycle methyl condensing units in good operating condition. TRILLING & MONTAGUE, 2401 Walnut St., Philadelphia 3, Pa.

EQUIPMENT FOR SALE

100—FRIGIDAIRE Model "K" ⅓-hp. units, $32.50; 100—Frigidaire Model A233E ⅓-hp. units, $42.50. All units in running condition, with A.C. 60 cycle motors. F.O.B. New York. Write for our surplus list. 25% deposit must accompany all orders. EDISON COOLING CORP., Dept. R., 310 E. 149th St., New York 51, N. Y.

MILK COOLERS equipped with General Electric Condensing Units. Various sizes. New, guaranteed equipment. Sold to dealers without priority. Orders taken for immediate and spring delivery. RAMSEY BROTHERS CO., 727 Bolivar Rd., Cleveland 15, Ohio.

ELECTRIC BOTTLE COOLERS. Brand new, streamlined. No priority required. Immediate shipment. 4½ case capacity. Self-contained with ¼-hp. Universal Cooler Corporation unit ready to plug in. Equipped with interior shelving and can be used as an 8 cu. ft. food refrigerator. Price $105. GENERAL REFRIGERATOR CO., 855 N. Broad St., Philadelphia, Pa.

POSITIONS AVAILABLE

WANTED: ENGINEER to assume complete charge of designing, developing and testing full line of commercial and air conditioning coils. Give complete details present and past positions, earnings, etc. Strictly confidential. Box 1495, Air Conditioning & Refrigeration News.

BEST OPPORTUNITY in all America both during and after the war. San Diego, California offers you everything worth living for. We need good service men. Will pay top wages, time and a half and double time for over 44 hours plus liberal commissions. WRIGHT REFRIGERATION SERVICE, 1337 India St., San Diego 1, Calif.

COMMERCIAL REFRIGERATION manufacturer has opening for man familiar with inspection, cycling tests, charging, etc. Experience and ability to handle men considered. Permanent position, city in Great Lakes area. Mention draft status. Box 1493, Air Conditioning & Refrigeration News.

POSITIONS WANTED

REFRIGERATOR SHOP MECHANIC. 44 years of age, 5 years experience on domestic and commercial electric driven units of many types. 10 years experience on AC and DC motors. Wish to work for an established firm. Box 1491, Air Conditioning & Refrigeration News.

EXPERIENCED REFRIGERATION salesman with successful background is desirous of obtaining representation of factory line of home freezing units, conservators or domestic refrigerators for postwar and present. Familiar with setting up jobber and dealer setups and direct to public sales organizations N. J.-Md.-D. C. and Eastern Penn. Correspondence invited. Box 1494, Air Conditioning & Refrigeration News.

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TO REFRIGERATOR MANUFACTURERS—A leading speciality organization in Great Britain, controlling large sales and service staffs, wishes to make arrangements now for sole selling rights of first class American refrigerators after war. Every facility for manufacturing under license or assembly. Box 9663, ARMSTRONG-WARDEN, LTD., 69 New Oxford St., London W. C. 1, England.

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Modern Display Cases
Coolers, Refrigerators
AMANA SOCIETY, AMANA, IOWA

HEAT TRANSFER EQUIPMENT
MARLO
COIL COMPANY
SAINT LOUIS, MISSOURI

Established CURTIS REFRIGERATION AIR CONDITIONING and COMMERCIAL 1854
Curtis Refrigerating Machine Division
of Curtis Manufacturing Company
1912 Kienlen Ave. St. Louis, Mo.

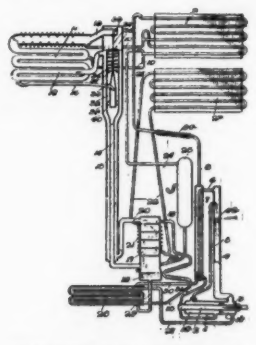
Patents (Cont.)

(Concluded from Page 26, Column 4)

Application July 8, 1938. Serial No. 218,146. 2 Claims. (Cl. 137—153).

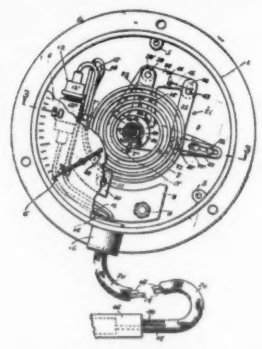
1. A combination pressure regulator and shut-off device comprising a valve casing having an inlet chamber, an outlet chamber, and a passageway connecting the two, said passageway having two concentric spaced walls, the inner of which is provided with configurated ports and the outer of which terminates at the inlet end of the passageway in a valve seat, a shut-off valve in said inlet chamber adapted to close against said valve seat, a throttling valve movable within the inner wall and throttling the flow through the ports of said passageway, a movable diaphragm, means connecting said shut-off valve and said throttling valve to said diaphragm with said shut-off valve and said throttling valve spaced apart to provide an intermediate chamber between said shut-off and throttling valves, said diaphragm being subject on one side to the pressure in said outlet chamber and actuating said throttling valve to maintain a regulated pressure therein, and means for varying the force exerted on the opposite side of said diaphragm for adjusting the pressure maintained by said throttling valve, said shut-off valve having a large area relative to said configurated ports so as to move with a snap action from between closed and a minimum open position because of a change in the pressure differential to which it is subjected.

2,333,780. CONTINUOUS ABSORPTION REFRIGERATING SYSTEM. Ernest W. Guernsey, Baltimore, Md., assignor to Consolidated Gas Electric Light and Power Co. of Baltimore, Baltimore, Md., a corporation of Maryland. Application May 25, 1938, Serial No. 210,063. 12 Claims. (Cl. 62—5).



1. A refrigerating system of the continuous absorption type comprising a generator for generating refrigerating vapor, an evaporator, means for condensing said vapor and circulating the condensate through said evaporator, means for circulating gas through said evaporator to remove evaporated condensate therefrom, flow regulating means through which said circulating gas passes, an actuating device for said regulating means, said device receiving unevaporated condensate from said evaporator whereby it tends to move in one direction, and means urging said device in the opposite direction, said device being constructed and arranged to allow the escape of condensate from said device at a predetermined rate.

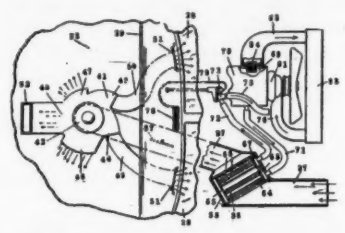
2,333,793. CONDITION RESPONSIVE INDICATING INSTRUMENT. Emil T. Johnson, West Orange, N. J., assignor to Thomas A. Edison, Inc., West Orange, N. J., a corporation of New Jersey. Application Feb. 29, 1940, Serial No. 321,484. 19 Claims. (Cl. 73—370).



10. In an instrument of the character described having indicating means controlled to register the temperature at a point remote from the instrument and including separately actuatable Bourdon springs: the combination of a differential mechanism having a follower coupled to said indicating means and two relatively movable driving members each coupled to said follower, the movement-transmitting ratios of the couplings between said follower and respective driving members being opposite in sign and unequal in magnitude; means operatively connecting said Bourdon spring and driving members respectively; and liquid expansible means for actuating said Bourdon springs comprising a bulb located at said point, a tube connecting said bulb with one of said Bourdon springs, and a second tube paralleling said first tube and sealed at one end and connected at its opposite end to the other of said Bourdon springs, and the cross-sectional areas of the bores of said tubes differing by a predetermined amount to cause one of said Bourdon springs to be actuated to greater extent than the other in response to a temperature change between the instrument and said point, whereby to compensate for the difference in the effect of such temperature change on the indicating means caused by the inequality of the movement-transmitting ratios of said couplings.

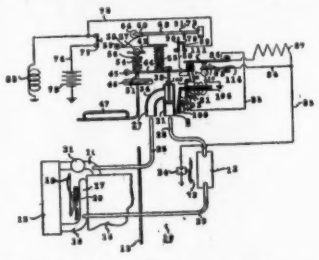
2,333,818. HEATING SYSTEM. Estel C. Raney, Columbus, Ohio, assignor to Ranco Inc., Columbus, Ohio, a corporation of Ohio. Application May 29, 1940, Serial No. 337,851. 1 Claim. (Cl. 98—2).

In combination, a vehicle including a closed body, an air distributing manifold in said body, said manifold having spaced side walls and a substantially circular peripheral wall connecting the side walls, said peripheral wall having a plurality of air outlet openings spaced from one another about the peripheral wall, one of said side walls having an air intake opening; a fan in said manifold, said fan including a rotatable fan blade carrying



member disposed within the manifold, and a plurality of blades forming an annular group, each of said blades having one end thereof carried by said member and each extending along and adjacent the inner periphery of the said peripheral wall, at least the major portion of each of said blades lying closer to the periphery of the manifold than to the axis of the latter, said inlet opening in said side wall being adjacent the axis of the fan; means for rotating the member for causing air to be drawn by said blades through said air inlet opening and discharged through said air outlet openings; means forming a heat exchanger having an air outlet connected with the air inlet of the manifold, said heat exchanger having an air inlet; and means independent of said fan and connected to the air inlet of the heat exchanger for forcing air from outside said body through the heat exchanger, the inlet of the manifold, the manifold and the outlets of the latter by forward movement of the vehicle.

2,333,819. CONTROL APPARATUS. Estel C. Raney, Columbus, Ohio, assignor to Ranco, Inc., Columbus, Ohio, a corporation of Ohio. Application Dec. 19, 1940, Serial No. 370,907. 9 Claims. (Cl. 236—37).

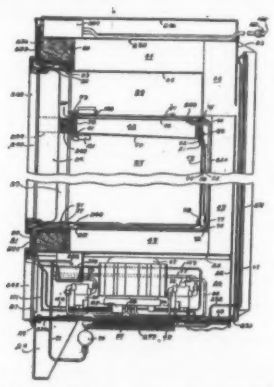


2. In a heat exchange system, a heat exchanger; means for circulating a heat exchange fluid through the exchanger; means for circulating a medium over the exchanger; means responsive to a predetermined temperature of the heat exchange fluid for initiating operation of the second mentioned means; and means rendered effective by operation of the third mentioned means for maintaining operation of the second mentioned means regardless of variations in temperature of said fluid.

2,333,862. HEAT EXCHANGE MATERIAL. Lyle O. Hill and Leland W. Short, Chicago, Ill., assignor to the American Dairy Cattle Club, Chicago, Ill., a corporation of Illinois. No drawing. Original application Jan. 12, 1942, Serial No. 426,488. Divided and this application Jan. 18, 1943, Serial No. 472,734. 9 Claims. (Cl. 252—70).

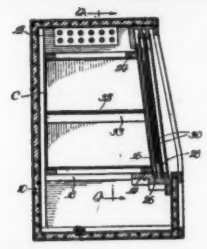
1. A heat exchange material having a melting temperature between about 32° and 50° F. which remains within narrow limits during the change of state of said material from a solid to a liquid which comprises an amine selected from the group consisting of ethylene diamine and monoethanolamine and a compound dissolved therein to the point of saturation at said melting temperature to form a eutectic mixture having a substantially constant melting point within said limits, said compound being soluble in said amine to an extent of not more than about 8 mols per 1,000 grams of amine at said melting temperature.

2,333,899. REFRIGERATING APPARATUS. Carl A. Stickel, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application May 25, 1934, Serial No. 727,507. 30 Claims. (Cl. 62—4).



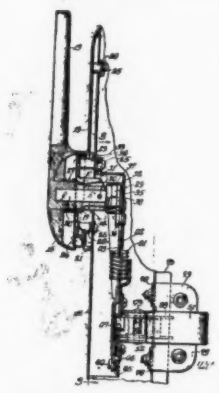
1. Refrigerating apparatus including a cabinet having a plurality of open box-like metal inner lining members enclosing a plurality of compartments to be cooled, one of said inner liner structures having spaced sheets of metal forming its rear wall providing a refrigerant evaporating structure, another of said inner liner structures having spaced sheets of metal forming its bottom wall portion providing a refrigerant evaporating structure, a motor driven compressing and condensing means for supplying liquid refrigerant to said evaporating structures and for withdrawing evaporated refrigerant therefrom including a compressor having high pressure and low pressure suction ports one of said suction ports being connected to one of said evaporator structures and another said suction ports being connected to another of the evaporator structures, thermostatic means responsive to the temperature of each of said compartments to be controlled, said thermostatic means controlling the operation of a motor driven compressing and condensing means and controlling the flow of evaporated refrigerant from the evaporator structures to the suction ports, a door for access to the compartment enclosed by the inner liner structures, insulating means for insulating the inner liner structures from each other, and resilient means extending from said insulating means and cooperating with the door when in closed position for sealing the compartments from each other when the door is closed.

2,333,900. FOOD STORAGE AND DISPLAY DEVICE. Edward M. Stiles, Burlington, Iowa. Application Dec. 1, 1941, Serial No. 421,165. 6 Claims. (Cl. 62—89.6).



1. Refrigerated storage means comprising a plurality of spaced-apart compartments having walls of conducting material, disposed within a refrigerated casing, and baffles within said compartments so arranged that at any place within the compartment a vertical cross section on a plane transverse to the length of the compartment will have not more than 200 square inches of area throughout which unrestricted convection circulation may take place.

2,334,065. REFRIGERATOR LATCH. William O. Burke, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware. Application June 5, 1940, Serial No. 338,873. 11 Claims. (Cl. 292—123).



4. In a latch mechanism, the combination of a slide housing adapted to be mounted on a door, a latch mechanism housing secured to said slide housing, latch mechanism within said housing comprising a pivotally mounted latch bolt, a bell crank lever, a link connecting said bolt and level and a spring for projecting said bolt, a reciprocatory slide in said slide housing, a bell crank lever operable thereby to actuate said first mentioned bell crank lever, an arm for actuating said slide, and a universally mounted handle to which said arm is connected.

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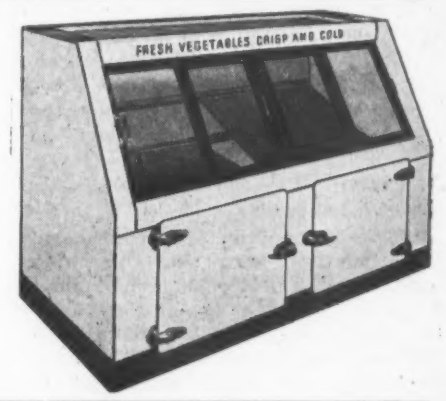

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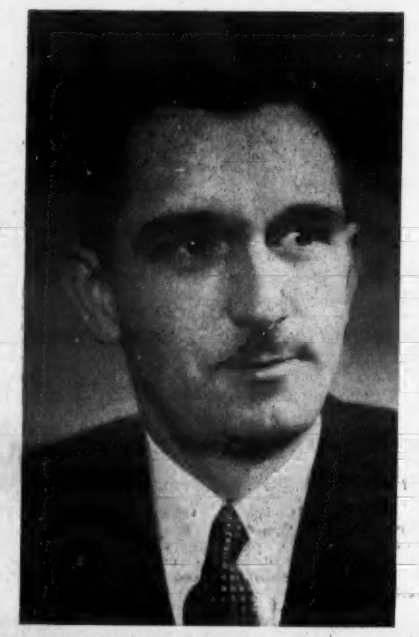


T. W. MARKHAM
Was recently appointed advertising and sales promotion manager of Frigidaire's Commercial & Air Conditioning Division.

Auto Repair Parts Get 'Go Ahead'

WASHINGTON, D. C.—Recent amendment to Limitation Order L-158 covering automotive parts is interesting and significant for the reason that WPB orders covering automotive parts are about one step advanced over those covering refrigeration parts, and thus are often indicative of what is in store for the refrigeration industry.

The amended Order L-158 gives producers of those parts enumerated in the order a virtual "go ahead" on the production of such parts between now and April 1, 1944, since the order states:

"Notwithstanding the provisions of Priorities Regulation No. 1, part 944, until April 1, 1944 replacement parts for medium and heavy motor trucks, truck trailers, passenger carriers, off-the-highway motor vehicles and motorized fire equipment must be produced as if the orders therefore bore a preference rating of AA-1.

"Replacements parts for passenger automobiles and light trucks must be produced as if the orders therefor bore a preference rating of AA-2X."

The restrictions on producers' inventories of finished replacement parts have been eliminated. This change will allow producers to schedule runs of replacement parts in accordance with the most efficient manufacturing practices and not limit their usage of facilities to production of specific quotas.

No preference ratings are required for the delivery of replacement parts for resale. All deliveries of parts for resale or to consumers may be made as if the orders therefor bore the preference ratings assigned to their production and without regard to orders bearing a low rating.

Redistribution Plan For Valves Set Up

WASHINGTON, D. C.—A program calling for redistribution of 1,200,000 new brass and bronze valves through normal trade channels, was announced Nov. 30 by WPB.

The program is designed to meet urgent demands for brass and bronze valves and to conserve manpower needed to manufacture new valves.

Redistribution of valves will be carried on through manufacturers of new valves, who will be called upon to review lists of surplus valves reported to WPB.

Manual Offers Helps On Blower Servicing

BUFFALO—A pocketsize manual, "Maintenance and Installation Data," dealing with industrial fans and air conditioning equipment, has been issued by Buffalo Forge Co.

The manual covers all important steps in the installation and care of fans and conditioning equipment, stressing many points often overlooked in handling this type of service.

From a practical angle, recommendations are made on such subjects as fan foundations, installation, bearings, rotors, drivers, couplings, fan balancing, inspection, cleaning, repairing, painting, and safety precaution.

Earnings Report Given By Nash-Kelvinator

(Concluded from Page 1, Column 5)

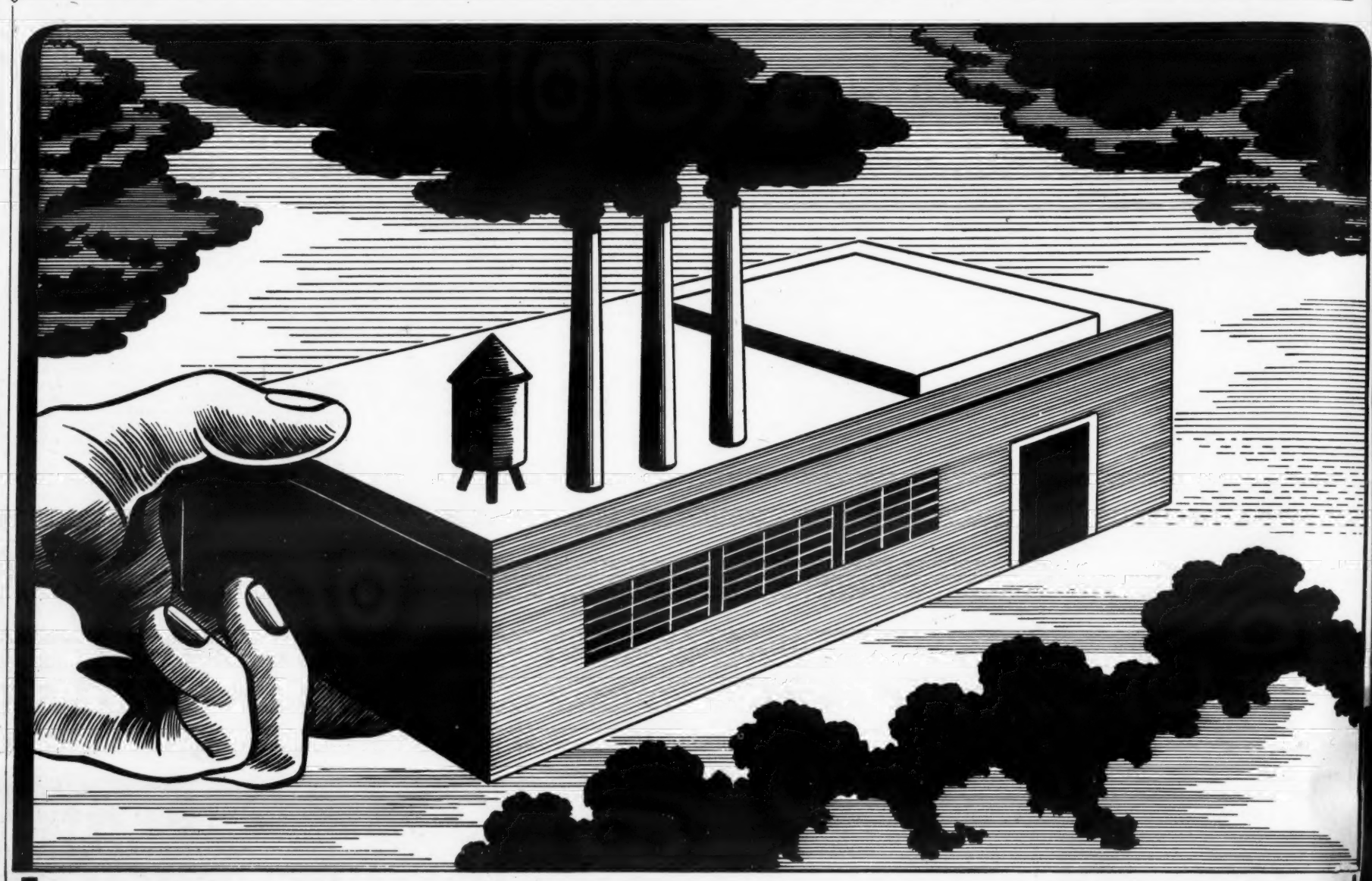
ago, and top output of aircraft engines will be reached sometime in 1944. Mass production of helicopters is scheduled for sometime during the coming year.

According to Mason's statement, renegotiation proceedings under the war profits control act for the year ended Sept. 30, 1942, were completed recently and no refund of profits was required. Proceedings for the 1943 fiscal year just ended have not been completed and no estimate of the amount which may be refundable, if any, can be determined.

Standard Accounting Outlined In Booklet

NEW YORK CITY — Advantages of standardized accounting methods to small businesses are presented in a "Small Store Accounting Manual," recently compiled by H. I. Kleinhaus, general manager of the controller's congress of the National Retail Dry Goods Assn.

Smaller business units within a given trade or industry, Mr. Kleinhaus believes, should apply accounting practices peculiar to that business. He points out that nearly all large companies use a standard system. Offices of the congress are at 101 W. 31st St., New York City.



LIFT YOUR BUSINESS INTO THE BLUE

"The sky is the limit." You've heard that expression before. (And it has probably cost you money.) But, when the war is won, it will be literally true so far as your place in refrigeration is concerned. And you will make money . . . a LOT of money.

Also (once again remember your poker) you may lose a lot of money . . . for a lifted limit increases only the OPPORTUNITY of gain or loss. It can't help the man who holds a straight flush and doesn't recognize it. Right now the cards are being dealt . . . and it looks as if you (and every member of this booming industry) are going to hit the "jack-pot."

So don't throw in your hand. Keep your eyes open and your mind awake. You're getting real cards, my friend, you're getting REAL cards.

Just remember to bet. The straight flush that's coming won't do you any good unless you do. What do you bet . . . ? Why, man, what would you bet but your business assets . . . like friends, and prospects, and engineering "know-how," and ambition. NOW is the time to build these assets . . . because soon . . . SOON . . . S-O-O-N it will be time to get your bet down.

The only thing worse than failing to recognize a straight flush is lacking customers, knowledge and initiative to capitalize one of the hottest commercial developments of the war. "The sky is the limit" . . . but don't forget to bet!

PENGUIN PETE

P. S. So you like sure bets . . . ? BUY WAR BONDS!

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